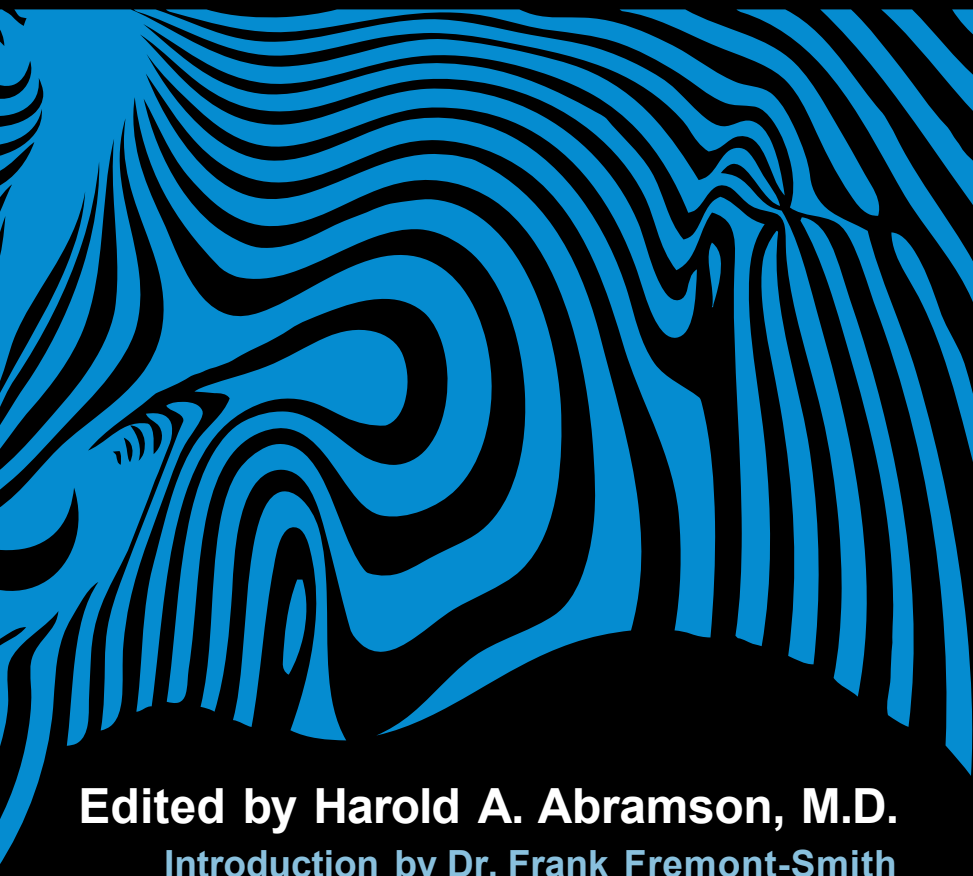
The Use of LSD in Psychotherapy and Alcoholism



Edited by Harold A. Abramson, M.D.
Introduction by Dr. Frank Fremont-Smith

FROM THE TABLE OF CONTENTS

SOCIAL AND PARA-MEDICAL ASPECTS OF HALLUCINOGENIC DRUGS, William H. McGlothlin, Ph.D., *Research Associate, Department of Psychology, University of Southern California*

DOLPHIN-HUMAN RELATION AND LSD 25, John C. Lilly, M.D., *Director, Communication Research Institute, Miami; St. Thomas, V.I.*

THEORETICAL ASPECTS OF LSD THERAPY, Dr. John Buckman, M.R.C.S., L.R.C.P., D.P.M., *Senior Hospital Medical Officer, Marlborough Day Hospital, London*

THE USE OF LSD 25 IN PERSONALITY DIAGNOSTICS AND THERAPY OF PSYCHOGENIC DISORDERS, Stanislaw Grof, M.D., *Research Psychiatrist, Psychiatric Research Institute, Prague*

LSD FACILITATION OF PSYCHOANALYTIC TREATMENT: A CASE STUDY IN DEPTH, Charles Clay Dahlberg, M.D., *Training and Supervisory Analyst, William Alanson White Psychoanalytic Institute, New York City*

A CASE OF CHANGE AND PARTIAL REGRESSION FOLLOWING ONE LSD 25 TREATMENT, Jack L. Ward, M.D., *Staff Psychiatrist, New Jersey Reformatory at Bordentown, Mercer Hospital*

A PROGRAM FOR THE TREATMENT OF ALCOHOLISM: LSD, MALVARIA AND NICOTINIC ACID, Abram Hoffer, M.D., *Director, Psychiatric Research, Department of Public Health, Saskatchewan*

A COMMENT ON SOME USES OF PSYCHOTOMIMETICS IN PSYCHIATRY, Humphry Osmond, M.R.C.S., L.R.C.P., D.P.M., F.W.A., *Director, Bureau of Neurology and Psychiatry, New Jersey Neuropsychiatric Institute*

IS LSD OF VALUE IN TREATING ALCOHOLICS?, Ruth Fox, M.D., *Medical Director, National Council on Alcoholism*

PSYCHOTHERAPY WITH LSD, Sidney Cohen, M.D., *Chief, Psycho somatic Medicine, Veterans Administration Hospital, Los Angeles*

PRELIMINARY METHOD FOR STUDY OF LSD WITH CHILDREN, Andre Rob, M.D., *Director,* **Leonard W. Krinsky, Ph.D.,** *Director, Psychological Service,* **Harold A. Abramson, M.D.,** *Director of Research,* **L. Goldfarb, M.D.,** *Clinical Director, South Oaks Psychiatric Hospital, Amityville, New York*

Front jacket flap

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The Use of LSD IN PSYCHOTHERAPY and Alcoholism

Edited by Harold A. Abramson, M.D.

Introduction by Frank Fremont-Smith, M.D.

In the midst of the nation-wide front-page furors over the indiscriminate public use of LSD (lysergic acid diethylamide) one fact remains clear. There is an interest unprecedented in recent history in the drug's effects—whether they are thought to be mind-damaging or, as most experienced and responsible investigators claim, perhaps the greatest breakthrough in psychotherapy in the last sixty years.

Beneath the near-hysterical headlines, beneath the allegations of thrill-seeking and cultism, it is sometimes mentioned that informed, expert, and methodical research into the therapeutic applications of LSD has been taking place for more than twenty years.

It is this thorough, important research and its meaningful findings that are reported, with neither preconceived bias nor sensationalism, in *The Use of LSD in Psychotherapy and Alcoholism.*

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Back jacket flap

continued from front flap

In May 1965, Dr. Harold A. Abramson called together at South Oaks Hospital, Amityville, N.Y., fifty doctors, scientists, and psychiatrists from all over the Western world (and from behind the Iron Curtain) to deliver papers on their work with this remarkable drug.

Included in the book are discussions of the thirty-six papers by the participants in the conference. Their questionings, agreements, and disputes lead inevitably to controversy, but it is an unmistakably productive one.

THE AUTHOR

Dr. Harold A. Abramson—Director of Research at South Oaks Hospital and a pioneer in the field of combined psychiatric and chemical research—practices psychiatry in New York City. He has written several highly regarded professional books, edited eleven more for the Josiah Macy, Jr., Foundation, and is editor of the *Journal of Asthma Research.* Dr. Abramson served in the Office of the Chief, Chemical Warfare Service, from 1942 to 1946, and thereafter for ten years was a consultant in psychology to the Department of the Army.

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To my wife Virginia
who assisted me in all ways during the early years of
experiments with psychotomimetic compounds

H.A.A.

Introduction

In May, 1965, a group of investigators in the field of psychiatry met at South Oaks Hospital, in Amityville, New York. The purpose of the meeting was to exchange information and discuss problems regarding the use of a remarkable drug that has been a focus of research in psychiatry for more than twenty years. This drug, LSD-25, commonly called LSD, is a derivative of d-lysergic acid. Lysergic acid itself is the basis of many ergot compounds used daily in medicine. But LSD has a unique property which differentiates it from all other drugs. Even in extremely small doses, LSD produces a disturbance in mentation—in thinking processes, in perception of sound, light and color, in emotional reaction, in ideation. This disturbance is reversible. After a certain number of hours, the effect of LSD itself wears off.

Contrary to assertions in the popular press, when LSD is administered as part of a therapeutic medical program, "irreversible psychotic changes" and "brain damage" do not occur. Certain irresponsible statements that it does produce such adverse effects have not been supported by valid scientific evidence.

The effect of LSD on many people resembles a psychotic state. The reason for this is that LSD creates an emotional storm during which a person frequently is able to recall forgotten—or repressed—events and early experience. Outwardly it may seem that the person is psychotic. Actually he is undergoing a complete re-evaluation of his self-image.

LSD, if taken without proper supervision and under undesirable circumstances, can produce a reaction in unstable people which presents an alarming appearance and can lead to dangerous behavior. Like any other drug, LSD belongs in the hands of responsible medical authorities. In responsible hands, LSD is a valuable tool in hastening successful results of psychotherapy, as seen particularly with alcoholics, a group notoriously difficult to treat.

How small is a small dose of LSD? Throughout this volume the reader will encounter the abbreviation, mcg. Mcg stands for microgram, singular or plural, as mg stands for milligram and kg for kilogram. One mcg is one thousandth of a milligram, or one millionth of a gram. In terms of a familiar weight, one pound, one mcg equals about one-half a billionth of a pound. Micrograms are really too small to be visualized readily but it helps to remember that there are 300,000 mcg of aspirin in the ordinary tablet. We now may ask how many mcg of LSD are needed for the drug to make itself felt? The first, or threshold dose, may be about 25 mcg. Under desirable conditions a dose of about 100 mcg produces a dramatic reaction, often

resembling a psychotic state in nearly everyone. I use the term desirable because, if the setting in which LSD is given to the patient seems threatening, the reaction may be distressing to the patient and frightening to the people with him.

If 100 mcg of LSD is administered to a group of so-called normal subjects, each member of the group will react differently, according to his personality structure and to the setting, or milieu, in which the drug is given. The attitude of the physician who administers the drug exerts a significant influence. An anxious physician inevitably produces an anxious subject. The disagreements and opposition to LSD therapy voiced by inexperienced or anxious investigators can easily be understood when seen in the context of these complicated variables.

In the results of experiments published more than ten years ago, my co-workers and I found that symptoms frequently reported by fourteen non-psychotic subjects who received LSD included memory difficulties, mood changes and difficulty in concentration. Feelings of unsteadiness, inner trembling and dizziness were reported as well as peculiar sensations in the hands, the feet and on the skin; dream-like feelings were common, as were heaviness in the hands and feet, drowsiness, and difficulty in focusing vision. Anxiety occurred often. Depersonalization was observed. There were occasional paranoid reactions. Some reported a peculiar sensation of the lips being drawn back, as in an involuntary smile. With dosages as low as 100 mcg, hallucinations were rarely reported. As a matter of fact, I am still somewhat surprised when LSD is described as an hallucinogenic drug, since what is intended is, more accurately, heightened perception or *illusion.*

More important than the pseudo-hallucinations produced by the drug is the fact that LSD and similar compounds may be used in psycholytic and psychedelic therapy. Both forms of therapy are discussed at length in the papers which follow.

In spite of the complicated symptoms and signs produced by LSD, even when given in a suitable setting, the drug's action leads to an extraordinary and somewhat paradoxical integrative process in the patient's psyche, because of the nature of his relationship with the therapist. The unpleasant and peculiar storm taking place in the nervous system is accompanied by a remarkable state of ego enhancement occurring simultaneously with ego depression. During the LSD reaction the therapist may manipulate this dual change in ego. The ego enhancement produced may be employed by the therapist for the benefit of the patient. In other words, the patient reacts to the LSD and to the therapist, not to the LSD alone. Some of the characteristics of the therapeutic process may include intense awareness of the treatment period with good memory of the experience; increased fantasy; limited regressive ideation; facilitated interpretation of symbolic processes; acute awareness of the need to maintain conscious control of self; mounting anxiety; difficulties in the struggle to control feelings; fluctuating depression and euphoria; fluctuating disturbances in perception; rare hallucinatory episodes, almost always accompanied by simultaneous awareness of reality and by mild sexual stimulation. The

reader will see clearly that the therapist himself must be relatively free of anxiety if he is to be successful in treating the patient who is undergoing this multifaceted psychic upheaval.

The non-medical reader may wonder what compounds related to LSD are commonly used in medicine. These are familiar drugs: Ergonovine Maleate, Methyl Ergonovine Tartrate, Ergotamine Tartrate as well as Methysergide. Crude extracts of ergot were used by midwives as far back as the seventeenth century for its effect on the uterus. Other plant extracts have been employed for more than 3,000 years for their effects on the mind, usually in connection with ritualistic, religious and sociological experiences. Perhaps the broad use by primitive peoples of the drugs similar to LSD in order to satisfy some need for cultural stability and adaptive processing may find a parallel in the modern use of LSD in psychoanalytically oriented psychotherapy.

The stresses of modern living and the lengthy procedure of psychoanalysis have made us all aware of the need for less time-consuming techniques to give the patient the confidence and ability to face his own problems. The use of LSD to enable the patient to shorten this process has been termed *psycholytic therapy* in Europe. Low doses of LSD are used in psycholytic therapy. It was clearly distinguished from psychedelic therapy by the investigators present at the South Oaks conference. Psycholytic therapy has as its goal greater maturity, with increasing social and physiological adaptive mechanisms. Psychedelic therapy, the method usually applied in this country, commonly makes use of doses of at least 300 mcg of LSD and the doses may go as high as 2000 mcg. The principal focus in psychedelic therapy is to attain the extraordinary experience produced by the drug itself, which is essentially independent of psychoanalytic therapy. This experience is variously described as "mystical," "ecstatic" or "apocalyptic." Regardless of the description, the LSD experience leads to a symptomatic type of cure in terms of an immediate change in behavior. At least 25% of alcoholics who have been treated by psychedelic LSD therapy have remained abstinent for six months following the treatment.

The reader of this volume will find considerable controversy concerning the use of statistical methods when evaluating the results of psychotherapy with LSD and similar drugs. The term "double-blind" will be frequently encountered. The double-blind experiment is one that is arranged with two groups of patients who are simultaneously treated. Neither patient nor doctor knows which group has received LSD while the matched group has been given another drug, or some harmless substance. It should seem fairly obvious that it would be unlikely for a patient who had been given a placebo, or sugar pill, to believe that he had taken LSD. It is true that when studying the effect of the drug on the human organism the investigator should endeavor to be uninfluenced by his own expectations. The therapeutic nihilist rarely acknowledges the value of a drug. The enthusiastic therapist hopefully searches for a positive result. To minimize the anticipations of both nihilist and enthusiast, the double-blind type of experimental procedure in clinical trials has been widely adopted. The procedure and its results depend upon statistics. Personal

bias is supposed to be eliminated. The method involves either a suitably large sample of subjects or special mathematical assumptions if the sample is small.

The effects of drugs which are of importance to research in psychopharmacology can hardly be studied by the double-blind technique alone. Certainly, whenever the psyche is involved, at least equal weight must be given to the intensive study of drug effects in a single patient. It is difficult to understand how the result of extensive study, based on patient group averages rather than on individuals, can have direct implications with respect to improvement in the psychotherapy of patients. Judgments regarding indications for treatment derived from the single case study may be more meaningful than those derived from a large sample. The psyche is always involved, whether we like it or not! It is important to remember that statistics developed from systematic observations of the patient under treatment may be more useful than statistics concerning a somewhat vague patient population. Only by direct clinical observations or clinical judgment can we really learn about the patient. This can be the focal point of many hypotheses, and it is such observations which may provide a proper basis for subsequent clinical research by statistical analysis.

Both clinical judgment and the double-blind method are important. However, the intensive study of the patient must be continued by the practicing physician. No rigid governmental or academic agency will ever take the place of the clinical judgment of the practicing physician. Without his clinical judgment dangerous shoals lie ahead.

Are we entering a new machine age of medicine, engendered not by the industrial revolution, but by the computer revolution? May physicians and investigators, unable to deal with the turbulent feelings of their patients, search for a fashionable refuge in statistics which provide a nonthreatening haven? A recent article in one of the Sunday weekly supplements portrays how the author, a pathologist, and a reporter support their violent opposition to the use of LSD by distorting statistics and by relegating clinical observations to a minor position. It will be tragic, indeed, for all of us when a pathologist becomes our authority for the value of psychotherapeutic procedures!

It was important to arrange for those registered members of the South Oaks Conference who were coming from nine foreign countries to know in advance what would be the contributions of the other members. Papers on psychiatric subjects are necessarily lengthy and difficult to follow at meetings lasting several days. This obstacle to clarity of communication between the members of the conference was overcome in the following way. Almost all papers were sent to me well ahead of the meeting. Copies of the manuscripts then were sent to all members weeks in advance. In this way nearly all the data to be presented were familiar to the group before the conference. Language barriers were thus essentially overcome. Each author was given ten minutes to summarize his views. Twenty minutes were allotted to discussion. Thanks to the excellent way in which Dr. Frank Fremont-Smith chaired the conference, all the summaries were presented with suitable discussion periods.

Although I had the pleasure and privilege for the second time of organizing a conference on LSD, without the active cooperation of Dr. André Rolo, Dr. Frank Fremont-Smith and the Board of Directors of South Oaks Hospital, the conference would have been well-nigh impossible. For their help with the infinite number of details connected with a project of this type, I wish to thank especially Miss Polly Andrews, Miss Cornelia Cassidy, Mrs. Gwen Neviackas, Mrs. Henriette H. Gettner and other members of the staff of South Oaks Hospital. Finally, I am grateful to my wife, Virginia, for her help in planning and organizing many of the experiments on LSD, its derivatives, and psilocybin reprinted here. Without her aid the conference could not have been held. Incidentally, in double-blind experiments designed to ascertain if non-psychotic normals could distinguish between LSD and psilocybin, her distinction score was the highest of the observer's group. No statistics here—only clinical observation. May it be with us always.

HAROLD A. ABRAMSON

Address:

THE SECOND INTERNATIONAL CONFERENCE ON THE USE OF LSD IN PSYCHOTHERAPY AND ALCOHOLISM

André Rolo, M.D.

Please let me welcome you on behalf of the Board of Directors and the Staff of the South Oaks Psychiatric Hospital. It is a special pleasure for me to be host to this distinguished body of physicians, many of whom have traveled thousands of miles to discuss their pioneering research in the field of psychiatry. I cannot fail to be impressed, indeed awed, by the dedication and spirit of research which appear in the various articles and by the remarkable unanimity of findings in different parts of the world with regard to the use of such drugs as LSD in helping mentally disturbed patients of many types. These observations will develop, I am sure, during the course of this conference.

As you are aware, the conference is being held under the auspices of the South Oaks Research Foundation, a division of South Oaks Psychiatric Hospital. The parent organization of both these facilities is The Long Island Home, Limited. I would like to tell you about the background of our institution. South Oaks Hospital was founded in 1882. It is now one of the largest private psychiatric hospitals in the country. The daily census averages 200 patients. Approximately 900 patients are admitted yearly. The entire range of psychiatric disorders is treated.

In recent years, the Research Foundation was organized as an integral division of the hospital. Research by staff members has been encouraged. This conference is an outgrowth of one of the major research endeavors, the use of LSD as an adjunct to psychotherapy.

The active management of the conference will be under the direction of Drs. Frank Fremont-Smith and Harold A. Abramson. Each participant will receive a program that lists the order of the presentation of papers and describes the general organization of the conference.

I would be remiss if I did not take a few moments to thank our Research Director, Dr. Abramson. It is due largely to his efforts that this second international conference is taking place. He has given more than generously of his time, as I know you must be aware from the number of bulletins you have received.

Drs. Randolf Alnaes of Norway, Keith S. Ditman of Los Angeles, Fred W. Langner of Albuquerque, and P. Oliver O'Reilly of Moose Jaw, Canada, unfortunately cannot be with us to discuss the papers they have written for the conference.

I now turn over the active direction of the conference to Dr. Frank Fremont-Smith. Dr. Fremont-Smith was for many years Medical Director of the Josiah Macy, Jr., Foundation and, in that capacity, supported the first international conference on uses of LSD at Princeton, New Jersey. He is past President of the World Federation of Mental Health and Director of the Interdisciplinary Communications Program, New York Academy of Sciences.

Preface

Frank Fremont-Smith, M.D.

Since the Second International Conference on the Use of LSD in Psychotherapy was held, in May 1965, there has been a flood of highly emotional and often ill-considered discussion of LSD and the possible dangers inherent in its use. The article on LSD in the March 25, 1966, issue of *Life* is probably the most widely noted example.

Certain university health officials have been troubled by the extremes to which "far out" groups of students are likely to go in personal experimentation, and have been aroused to action by the understandable concern of parents who feared for their children. Such officials have issued grave warnings about LSD that have caused serious alarm. One would wish that these officials would be equally diligent in trying to eradicate the genuinely harmful use of alcohol and cigarettes.

Most statements which have appeared in the press are based principally upon the undesirable experiences of a limited number of people who have bought LSD in the black market and administered it to themselves without medical supervision. The unfortunate publicity which ensued has resulted in violent attacks against LSD itself, even when used by physicians, in careful studies carried out in psychotherapeutically-oriented medical research and treatment. The federal government, in response to this ill-advised criticism on the part of unqualified individuals, has placed severe restrictions upon the availability of LSD to the medical profession. In some instances, these regulations have halted research on the value of LSD in the treatment of severe neurotic behavior patterns being conducted by precisely those physicians with the most extensive experience in the clinical and experimental use of LSD, leaving LSD research to the hostile and the ignorant.

On December 2, 1965, *The New England Journal of Medicine,* one of the most respected medical publications in this country, published an editorial under the title, "LSD—A Dangerous Drug." This editorial ignored the entire body of published data, including the report published by the Josiah Macy, Jr., Foundation on the First International Conference on LSD, "The Use of LSD in Psychotherapy," in stating "... today there is no published evidence that further experimentation is likely to yield *invaluable* data." (Emphasis mine). Such unwarranted denigration is almost the ultimate expression of an anti-scientific attitude.

This editorial was based on an article that reported psychiatric com-

plications which followed the unsupervised, self-administration of LSD by a group of individuals all of whom "had some degree of personality difficulty before taking the drug. Five were definitely psychotic before the LSD experience." As stated in my reply, "Pros and Cons Regarding LSD," which appeared in the March 3, 1966, issue of the *Journal:* "This article (on which the editorial was based) is an excellent warning against self-administration of this powerful agent, but has no bearing whatever on the potential value of further research." I stated further: "The study and better understanding of how such a powerful agent as LSD acts on the psyche of man is a valid and necessary approach to the physiologic mechanisms underlying the higher functions of the central nervous system.

"Therefore, I would like to urge that studies of the effects of LSD in animals and man be intensively pursued under careful control by competent investigators and that current federal and state regulations restricting the use of LSD under such circumstances be reviewed in the light of the published benefits, and the exceedingly few reports of adverse effects when LSD is administered under experienced medical supervision."

It is to be hoped that the research and clinical studies reported in this volume will serve to bring into better perspective the use of LSD in particular and the proper management in general of governmental restrictions upon drug research by qualified physicians.

Physicians, governmental agents, and the pharmaceutical industry must not lose sight of sound, medical tradition: only the responsible physician can determine the needs of the patient and that, in the final analysis, the physician must accept, and bear the responsibility for his action whether he is using the scalpel, ionizing radiation, or a pharmaceutical agent. The government also has a responsibility to protect the public by requiring adequate study by research physicians before a new drug is made generally available. But for the government to undertake to prescribe treatment, or to proscribe therapeutic methods, would be to ignore the well-established fact that the state of the patient is as important as the nature of the therapeutic agent in determining the outcome of treatment.

The withdrawal of a powerful therapeutic agent from clinical use should be resorted to only after the most careful study. Adverse reactions in animals, for instance, may not necessarily bear upon human response since there are well-known species differences. Even the occurrence of a few adverse reactions in man should not preclude the alerted physician's taking a calculated risk when dealing with serious illness for which there is no safer remedy available.

It is to be hoped that the reports of the present conference will serve to bring back into sharp focus the age-old responsibility of the physician, who alone, through his study of his individual patients, can determine what is most likely to be beneficial to them.

REGISTERED PARTICIPANTS

THE SECOND INTERNATIONAL CONFERENCE ON THE USE OF LSD IN PSYCHOTHERAPY

May 8th-May 10th, 1965

NAME	AFFILIATION
Abramson, Harold A., M.D.	(U.S.A.) Director of Research, South Oaks Psychiatric Hospital, Amityville
Arendsen Hein, G. W., M.D.	(Holland) Medical Director of Foundation Stichting, Veluweland Hospital
Baker, Edward F. W., M.D.	(Canada) Attending staff, Toronto Western Hospital, University of Toronto, Departments of Medicine and Psychiatry
Balestrieri, Antonio, M.D.	(Italy) Professor of Psychiatry, University of Bari
Blair, Donald, M.D.	(England) Consultant Psychiatrist, St. Bernard's Hospital, London
Buckman, John, Dr., M.R.C.S., L.B.C.P., D.P.M.	(England) Senior Hospital Medical Officer, Marlborough Day Hospital, London; now Assistant Professor of Psychiatry, University of Virginia, Charlotteville

NAME	AFFILIATION
Chiasson, John, M.D.	(Canada) Director, Alcoholic Treatment Services, Psychiatric Services of Quebec
Cohen, Sidney, M.D.	(U.S.A.) Chief, Psychosomatic Medicine, Veterans Administration Hospital, Los Angeles
Dahlberg, Charles Clay, M.D.	(U.S.A.) Training and Supervisory Analyst, William Alanson White Psychoanalytic Institute
Eisner, Betty Grover, PH.D.	(U.S.A.) Clinical Psychologist in private practice; Los Angeles
Fox, Ruth, M.D.	(U.S.A.) Medical Director, National Council on Alcoholism
Freedman, Daniel X., M.D.	(U.S.A.) Professor of Psychiatry, Yale University School of Medicine
Fremont-Smith, Frank, M.D.	(U.S.A.) Director, Interdisciplinary Communications Program, New York Academy of Sciences
Godfrey, Kenneth E., M.D.	(U.S.A.) Assistant Chief West Psychiatric Service, Topeka Veterans Administration
Grof, Stanislav, M.D.	(Czechoslovakia) Research Psychiatrist, Psychiatric Research Institute, Prague
Hausman, Col. William, M.C.	(U.S.A.) Deputy Director, Division of Neuropsychiatry, Walter Reed Army Institute of Research
Hertz, Mogens, M..	(Denmark) Assistant Chief Physician, Frederiksberg Hospital, Copenhagen

NAME	AFFILIATION
Hoffer, Abram, M.D.	(Canada) Director, Psychiatric Research, Department of Public Health, Saskatchewan
Johnsen, Gordon H., M.D.	(Norway) Chief Psychiatrist, *Modum Bads Nervesanatorium*, Vikersund
Ketchum, Maj. James S., M.C.	(U.S.A.) Chief, Psychopharmacology Branch, Directorate of Medical Research Chemical Warfare Service
Kramer, Sol, M.D.	(U.S.A.) Professor of Psychiatry and Biology, Behavioral Sciences Division, Department of Psychiatry, College of Medicine, Gainesville
Krinsky, Leonard W., PH.D.	(U.S.A.) Director, Psychological Service, South Oaks Hospital, Amityville
Kurland, Albert A., M.D.	(U.S.A.) Director of Research, Department of Mental Hygiene, Spring Grove State Hospital, Maryland
Leuner, Hanscarl, M.D.	(Germany) *Psychiatrische Klinik,* University of Göttingen; head of Psychotherapeutic Department
Levine, Jerome, M.D.	(U.S.A.) Research Psychiatrist, Psychopharmacology Service Center, National Institute of Mental Health
Lilly, John C., M.D.	(U.S.A.) Director, Communication Research Institute, Miami; St. Thomas, V.I.
Ling, Thomas M., M.D.	(England) Consultant Psychiatrist, Marlborough Day Hospital, London
Ludwig, Arnold M., M.D.	(U.S.A.) Director of Education and Research, Mendota State Hospital, Wisconsin

NAME	AFFILIATION
MacDonald, Donald C., M. D.	(Canada) Psychiatrist, Consultant to Hollywood Hospital, British Columbia
MacLean, J. Ross, M. D.	(Canada) Medical Director, Hollywood Hospital, New Westminster, British Columbia
McCririck, Mrs. Pauline	(England) Psychoanalyst; with Dr. A. Joyce Martin, Marlborough Day Hospital, London
McGlothlin, William H., PH.D.	(U.S.A.) Research Associate, Department of Psychology, University of Southern California
Martin, A. Joyce, M.D.	(England) Senior Hospital Medical Officer, Marlborough Day Hospital, London
Mogar, Robert E., PH.D.	(U.S.A.) Assistant Professor of Psychology; Director of Research, San Francisco State College
Murphy, Robert C., Jr., M. D.	(U.S.A.) Private practice; Waverly, Pennsylvania
Osmond, Humphry, M. R. C. S., D. P. M.	(U.S.A.) Director, Bureau of Neurology and Psychiatry, New Jersey Neuropsychiatric Institute
Pahnke, Walter N., M. D., PH.D.	(U.S.A.) Resident Psychiatrist, Massachusetts Mental Health Center
Rolo, Andre, M.D.	(U.S.A.) Director, South Oaks Psychiatric Hospital Amityville
Rinkel, Max, M.D.	(U.S.A.) Senior Research Consultant Massachusetts Mental Health Center

NAME	AFFILIATION
Savage, Charles, M.D.	(U.S.A.) Director of Research, Spring Grove State Hospital, Maryland
Servadio, Emilio, M.D.	(Italy) Hon. Professor of Psychology, l.l.d.; President, Italian Psychoanalytic Society, Rome
Unger, Sanford, PH.D.	(U.S.A.) Acting Chief of Psychosocial Research, Spring Grove State Hospital, Maryland
Van Rhijn, Cornelius H., M.D.	(Holland) Psychotherapist, private practice; Enchede
Ward, Jack L., M.D.	(U.S.A.) Staff Psychiatrist, New Jersey Reformatory at Bordentown, Mercer Hospital
Weber, E. S., M.D.	(U.S.A.) Psychiatrist, private practice; Princeton
Wicks, Miss Mary S.	(England) Probation Officer, Kidderminster, Worcester

Contents

INTRODUCTION Harold A. Abramson vii

ADDRESS André Rolo xiii

PREFACE Frank Fremont-Smith xv

REGISTERED PARTICIPANTS The Second International Conference on the Use of LSD in Psychotherapy xvii

I. CULTURAL PHARMACOLOGY

Social and Para-Medical Aspects of Hallucinogenic Drugs 3
William H. McGlothlin, PH.D.

II. PSYCHOPHARMACOLOGY

Dolphin-Human Relation and LSD 25 47
John C. Lilly, M.D.

Comparison of LSD with Methysergide and Psilocybin on Test Subjects 53
Harold A. Abramson, M. D., *and André Rolo,* M. D.

Evaluating LSD as a Psychotherapeutic Agent 74
Keith S. *Ditman,* M.D., *and Joseph J. Bailey,* M.D.

III. PSYCHOLYTIC THERAPY

Theoretical Aspects of LSD Therapy 83
Dr. John Buckman, M.R.C.S., L.R.C.P., D.P.M.

Present State of Psycholytic Therapy and Its Possibilities 101
Hanscarl Leaner, M.D.

Six Years' Experience with LSD Therapy 117
Fred W. Langner, M.D.

The Use of LSD 25 and Ritalin in the Treatment of Neurosis 129
Thomas M. Ling, M.D.

The Use of LSD 25 in Personality Diagnostics and Therapy of Psychogenic Disorders 154
Stanislav Grof, M.D.

LSD Psychotherapy; LSD Psycho-Exploration 191
Edward F. W. Baker, M.D.

Variables in Psycholytic Treatment 208
Cornelius H. Van Rhijn, M.D.

LSD Analysis 223
A. *Joyce Martin,* M.D.

LSD Facilitation of Psychoanalytic Treatment:
A Case Study in Depth 237
Charles Clay Dahlberg, M.D.

A Case of Change and Partial Regression
Following One LSD 25 Treatment 258
Jack L. Ward, M.D.

Multitherapist Interviews Utilizing LSD 303
André Rolo, M.D., *Leonard* W. *Krinsky,* PH.D.,
L. Goldfarb, M.D., *and Harold A. Abramson,* M.D.

A Psychotherapist's Debt to LSD 325
Robert C. Murphy, Jr., M.D.

Indications for Psycholytic Treatment with
Different Types of Patients 333
Gordon Johnsen, M.D.

IV. PSYCHEDELIC THERAPY, WITH SPECIAL REFERENCE TO ALCOHOLISM

A Program for the Treatment of Alcoholism:
LSD, Malvaria and Nicotinic Acid 343
Abram Hoffer, M. D.

LSD 25 and Mescaline as Therapeutic Adjuvants 407
J. Ross MacLean, M. D., *Donald C. MacDonald,* M. D.,
F. *Ogden, and E. Wilby*

A Comment on Some Uses of Psychotomimetics in Psychiatry 430
Humphry Osmond, M.R.C.S., L.R.C.P., D.P.M., F.W.A.

Some Problems in the Use of LSD 25 in the Treatment of Alcoholism 434
Humphry Osmond, M.R.C.S., L.R.C.P., D.P.M., F.W.A.,
Frances Cheek, PH.D., *Robert Albahary,* M.D.,
and Mary Sarett

The Metamorphosis of an LSD Psychotherapist 458
Kenneth E. Godfrey, M. D.

Is LSD of Value in Treating Alcoholics? 477
Ruth Fox, M. D.

The Psychedelic Procedure in the Treatment of the Alcoholic Patient 496
Albert A. *Kurland,* M.D., *Sanford Unger,* PH.D.,
and J. W. Shaffer, PH.D.

Brief Psychotherapy, LSD and the Alcoholic 504
P. Oliver O'Reilly, M. D.

Process and Outcome Variables in Psychedelic (LSD) Therapy 511
Charles Savage, M.D., *J. Fadiman,* M.A., *Robert E. Mogar,* PH.D., *and M. H. Allen,* M.D.

The Hypnodelic Treatment Technique 533
Jerome Levine, M. D., *and Arnold M. Ludwig,* M.D.

The Importance of the Non-Verbal 542
Betty Grover Eisner, PH.D.

Therapeutic Application of the Change in Consciousness Produced by Psycholytica (LSD, Psilocybin, etc.) 561
Randolf Alnaes, M.D.

Dimensions in Psychotherapy 569
G. W. Arendsen Hein, M.D.

Psychotherapy with LSD: Pro and Con 577
Sidney Cohen, M.D.

V. PROBATION CASE WORK

The Use of LSD in Probation Casework 601
Mary S. Wicks

VI. CHILDHOOD SCHIZOPHRENIA

Preliminary Method for Study of LSD with Children 619
André Rolo, M. D., *Leonard W. Krinsky,* PH.D., *Harold A. Abramson,* M.D., *and L. Goldfarb,* M.D.

VII. EFFECT ON RELIGIOUS EXPERIENCE

The Contribution of the Psychology of Religion to the Therapeutic Use of the Psychedelic Substances 629
Walter N. Pahnke, M.D., PH.D.

VIII. MECHANISMS OF ACTION IN MAN

On the Action Mechanisms of LSD 25 653
Antonio Balestrieri, M.D.

The Mechanism of the LSD Treatment as Viewed from the Aspect of Learning Processes 661
Mogens Hertz, M.D.

I

CULTURAL PHARMACOLOGY

Social and Para-Medical Aspects of Hallucinogenic Drugs

William H. McGlothlin, PH.D. *

I. INTRODUCTION

The subject of this paper is somewhat outside the topic of the present conference, since it does not deal with psychotherapy. On the other hand, the use of LSD in psychotherapy, in the United States at least, is virtually prohibited, partly because of the controversy over the non-medical use of the drug. Much of the controversy has arisen over a sort of do-it-yourself drug therapy advocated by Leary and Alpert. (67) The observation that the hallucinogens may have beneficial effects is not limited to extremists, however; Cole and Katz point out that much of the literature embodies "an implicit or explicit attitude that the self-knowledge or the leverage for self-change allegedly effected by these drugs may be of value or benefit to individuals not ordinarily considering themselves to be psychiatrically ill." (37) On the other hand, a number of editorials and articles (including that by Cole and Katz) have warned that uncontrolled use of the drugs could produce psychotic reactions, suicides and undesirable personality changes. (36, 47, 56, 57) Grinker writes, "Latent psychotics are disintegrating under the influence of even single doses; long-continued LSD experiences are subtly creating a psychopathology." (56) Farnsworth warns that we have little information on the long-range effects when taken over a protracted period of time and that they may prepare individuals to "move up" to other, "more powerful drugs." (47) In general, the critics have regarded LSD as a new and potentially dangerous drug which may produce long-term deleterious mental effects that are unknown at present.

The purpose of the present paper is to provide a perspective on the long-term effects and social implications of the protracted use of hallucinogenic drugs through a review of the extensive literature on peyote and cannabis sativa (marihuana). Since hallucinogens are known to have been in use for over four thousand years, there is no need to restrict our data to the very limited information available on the uncontrolled use of the more recent additions to the hallucinogen family. The psychic effects of peyote

* Department of Psychology, University of Southern California. Dr. McGlothlin is also associated with The RAND Corporation; but his views should not be interpreted as reflecting the views of The RAND Corporation or the official opinion or policy of any of its governmental or private research sponsors.

especially are similar to those of LSD. The limitation of peyote to the American Indian culture and religious setting restricts to some extent the generalizing of peyote findings with regard to the current situation; however, some interest exists in the use of LSD for religious purposes, (106) and one notable criticism in the present controversy is the formation of LSD cults. The effects of cannabis are less similar to those of LSD, but it has a history of use under much more varied conditions and motivations than does peyote. There are many other hallucinogens that have been used to alter mental states, * but only peyote and cannabis are sufficiently well-documented for the purposes of this paper.

Because peyote and cannabis have been freely available to certain groups for many years, studies on their use can help in predicting the extent and conditions under which LSD and similar drugs would be utilized if accessible. Of particular interest is what proportion of the population would be attracted to their use and for what purpose. Also of interest is the likely frequency of use and tendencies toward the creation of addiction or emotional dependence. The question of the relation of occasional or continual use of hallucinogens to psychosis can be examined, as well as the possibility that such use predisposes users to other more addictive drugs. Questions can be raised concerning personality changes resulting from their long-term use, as well as economic, family and social effects.

In addition to the peyote and cannabis review, I shall briefly describe, in a final section, a controlled experiment on the long-term effects of LSD which is now being conducted. This study poses a fundamental question with regard to the para-medical use of LSD; namely, can the subjective reports of reduced anxiety, attitude and value changes, and enhancement of creativity and aesthetic sensitivity in experimental (non-therapy) subjects be substantiated in a quantitative controlled experiment?

II. PEYOTE

History and Description

Peyote (Lophophora williamsii) is a small, spineless cactus that grows in Northeast Mexico and the Rio Grande Valley. It contains nine alkaloids; of these, mescaline is the principal one that gives rise to the hallucinogenic effects. Peyote is carrot shaped with only the top-most part extending above ground. This portion is cut off and, though it may be eaten fresh, usually is dried to form the peyote or "mescal" button.

The ritualistic use of peyote among the Mexican Indians was widespread at the time of the Spanish invasion and was documented as early as 1560. (64) Most evidence places the introduction into the United States (Texas) at around 1870. (104) Whereas peyotism was a seasonal affair in Mexico, peyote was used throughout the year in the Plains. Peyote meetings were held for a wide variety of reasons, most frequently for doctoring the sick. A few influential leaders were active in proselytizing neighboring

* Shultes states that there are more than forty naturally occurring hallucinogens in North and South America alone. (97)

tribes, and peyotism spread rapidly among the Plains Indians. The ritual procedures were standardized into a religious cult in contrast to the tribal nature they had in Mexico. As the cult spread northward, a number of Christian elements were added, and the religion was incorporated, under the name of "The First-Born Church of Christ," in 1914. Later the name was changed to the present title, "The Native American Church."

In 1919 the Indian Bureau conducted a formal census of peyotists and found that, out of a total of some 316,000 Indians, 13,345 were peyote users. (87) The Native American Church now claims to have 200,000 members, and has penetrated almost every tribe in the United States and Canada. (41) La Barre, writing in 1947, states:

> Without a doubt the most widely prevalent present-day religion among the Indians of the United States and Mexico is the peyote cult . . . the use of peyote has spread from group to group until today it has assumed the proportions of a great inter-tribal religion. (63)

The Ritual

To understand the motivation for the repeated use of peyote by the Indians, and to determine what bearing it may have on the use of modern-day hallucinogenic drugs, it is necessary to learn something of the setting in which the ritualistic use occurs. * There are occasional protracted peyote meetings (lasting perhaps a week or more) during holidays, such as Thanksgiving or Christmas; however, by far the most common is the weekend meeting held on Saturday night and extending into Sunday. Meetings are generally sponsored by a single family, although the cost is sometimes defrayed by a collection. The purpose of the meeting may be to doctor a sick member of the host family, to celebrate a birth or death anniversary, to ask for rain, or simply to gather for social reasons. All Indians are welcome regardless of tribe, and with today's improved transportation, participants often travel for distances of a hundred miles or more. (112)

Preparations prior to the meeting include bathing and rubbing with scented plants, and some tribes provide a sweat-bath lodge. Many tribes also observe the taboo of not eating salt on the day of the meeting. (64) The meetings are held in large tepees or in peyote churches, or sometimes in the home of a member. The ceremony begins in the evening with the members sitting in a circle around an altar and fire. Women sit on the outside of the circle. The altar, or "moon," consists of a crescent-shaped design made on the ground or in clay, and is related to visions experienced by the early leaders of the cult. A large peyote button is placed on the altar and is called the "chief" or "father peyote."

The principal official is the "road-chief"** who directs the ritual. Others are the drummer, "fire-chief" and doorman. The paraphernalia include a staff, drum, gourd rattle, special feathers, tobacco, incense, sage,

* There are a number of excellent detailed descriptions of the peyote ritual in the ethnological literature. Most of the description given here is based on La Barre's account. (64)

** So-called because he leads members to the peyote road or way.

and a number of other articles. As the cult has become more Christianized, the Bible often is placed on the altar along with the "father peyote," and read during the meeting. *

The ceremony begins with smoking tobacco and praying, each member staring at the "father peyote" and the flickering fire. The peyote is passed and each participant takes four buttons. The leader then begins to sing to the accompaniment of the drum and rattle; later he exchanges his staff and rattle for the drum; the drummer now sings four songs. The staff and rattle are passed around the circle. Each member sings four songs, while the person on his left plays the drum. Women do not participate in the singing. Peyote buttons are eaten throughout, in the amount desired by each individual.

There is praying at intervals and some members rise and make passionate confessions and declarations of repentance, accompanied by crying and strong emotions. At midnight there is an elaborate water ritual too complex to describe here. If doctoring is to be performed, it normally takes place at this time. The singing continues until dawn when the "peyote woman" is summoned to bring the morning water and another ceremony is performed, followed by the morning songs, prayers and the quitting song. A ceremonial breakfast of water, parched corn, fruit, and dried sweetened meat is served. The meeting is then formally over and participants spend the morning socializing and discussing their experiences and visions. The sponsoring family serves a large dinner at noon, after which the guests depart.

Motivation

A primary interest of this paper is the examination of the motives that cause persons to seek the hallucinogenic experiences; what are the attractions and satisfactions which result in submission to repeated exposures over a long period of time? In the case of peyotism, there are two sources of information: (1) direct observation of the ceremonies, and interviews with the Indians; and (2) the theoretical explanations offered by the ethnologists. To understand the former we must examine them in the context of the ritual setting. This is pointed out in La Barre's quotation of a remark by an Oto, who told him in "all seriousness" that "peyote doesn't work outside the meetings, because I have tried it." (64)

The Indians stress the attitude with which peyote is approached. Slotkin writes: "One must be conscious of his personal inadequacy, humble, sincere in wanting to obtain the benefits of peyote, and concentrate on it." (104) Petrullo writes in a similar vein:

> In the approach to the Spirit-Forces, including peyote, humility and a pitiful attitude are characteristic. In the speeches of the road-chief

* The Indians have found a number of Bible references to the eating of herbs, which they interpret as peyote—a practice that is particularly irksome to the missionaries attempting to suppress peyotism. (104) The most frequently quoted is Romans 14:2 and 3; "For one believeth that he may eat all things: another, who is weak, eateth herbs. Let not him that eateth despise him that eateth not; and let not him which eateth not, judge him that eateth."

> in the meetings, in the prayers, and in the tales of conversion and other lore, the Delaware appears meek and humble, conscious of his insufficiency. He is "a poor boy" who needs help and guidance from peyote, the compassionate, the pitiful. It is important that aid is not sought for material success in worldly enterprises, but purely in the realm of the spiritual, and in the medicinal. This doctrine is common to all peyotists, irrespective of Moon affiliation. (91)

Spindler writes about the goal of acquiring power invested in the Great Spirit:

> This power cannot be obtained by merely consuming peyote. It comes to one only when the person approaches it in a proper spirit of humility and after long preoccupation and concentration.... The humility of the Menomini peyotists is accompanied with declarations of worthlessness. (109)

Some consider the peyote-induced vision to be an important aspect, but others regard the visions as a distracting element to be suppressed:

> Peyote should not be eaten for visions. The visions are the effect of peyote on the body; but if you put your mind on God no visions will come to disturb you. (91)

Slotkin also relegates visions to a minor role, stating that persons seeking a mystic state through peyote ignore visions. (105)

> The peyotist not only seeks contact with the higher spirits, but also strives to resolve personal conflicts.
> Each individual turned in upon himself, with the aid of the narcotic and the fire into which he stares, is not only concentrating upon the nature of the power to come to him, or upon the spirits of heaven, but also upon the personal self and its conflicts. (109)

Louise Spindler stresses the power of the concerted group effort in this regard:

> During the recital of testimonials at meetings, the group reacts in unison, but one member, often crying uncontrollably, is the center of attention as he exposes his personal problems which he hopes peyote will help him solve. (110)

Slotkin emphasizes that to get the most from the meeting, the person should not adopt a passive attitude of receiving from peyote, but must prepare through intensive prior concentration on his particular problem. (103)

The peak of the experience is the surrender of the individual, or in more modern terms, the giving up of the ego—"ego death." Petrullo writes, "Unless one decides to surrender himself completely to peyote no benefit will be derived. "* (91) There is also the recognition that psychic surrender may involve intense suffering. An informant reported to Simmons during the ceremony:

* It should be noted that this attitude of complete helplessness is an essential prerequisite of almost all natural conversion experiences. There is invariably a "feeling of submission—of giving up, or giving to." (32)

> If there is suffering, this is the time. That's the reason I took a good rest; so I could stand it. Many a time I have fallen over at this time. It's getting on to what they call the dark hour, the hour of the Crucifixion. Everyone here is suffering now. (Quoted in La Barre.) (64)

A related aspect of the ceremony is the role of public confession. La Barre stresses the importance of this aspect:

> Many members rise and accuse themselves publicly of misdemeanors or offenses, asking pardon of persons who might have been injured by them... that confession to the father peyote and his authority, and repentance before the group, are of profound significance cannot be doubted. (64)

Skinner describes meetings where the leader asks the members to rise and confess their sins; *(102)* and an informant of Stewart's insists that "no one can face it (peyote) and lie." (112) La Barre writes:

> The significance of a group ritual, as in the peyote cult (aided here by the awesome pharmaco-dynamic "authority" of a powerful narcotic) may serve to explain the age-long survival of this kind of primitive psychotherapy (public confession), and its re-emergence and spread in the modern religion of the Plains, the peyote cult. (63)

La Barre goes on to interpret the functions of the father-peyote fetish:

> The psychological function of the fetish is to give physical form and locus to the projected "spiritual" entities, through which men disclaim responsibility for their own emotions, wishes and acts. The fetish may then serve as an externalized superego, or conscience, "projected" outside the individual. (63)

Whites who witness the peyote ceremonies typically come away very impressed with the sincerity of the participants. For instance, La Barre writes:

> There can be no shadow of a doubt concerning the deep and humble sincerity of the worship and belief—and sincerity perhaps, even in the absence of other ingredients, is the chief component of a living religion. And if the chief function of a religion is the liquidation of the anxieties and the solutions of the fears and troubles of its adherents, then surely the peyote religion eminently qualifies as such. * (64)

Turning now to motivation for taking peyote, as stated by the Indians themselves, there are several hundred interviews with peyotists available in the ethnological literature and in testimony at the many legal hearings held in the last half century. The most frequent claim of benefit is that peyote has cured a physical illness. In addition, there are many claims of

* It should be mentioned that, while the above description of the peyote ritual is typical, there are some noteworthy exceptions; Opler, in particular, describes the ritual in the Mescalero tribe as a struggle between rival shamans to gain power through the use of witchcraft, and there is a great deal of suspicion and distrust among participants. (88)

having been freed from alcoholism and led to adopt the ethics of the "Peyote Road"—brotherly love, care of family and self-reliance—which are virtually identical with those of Christianity. The most strikingly consistent report made by the Indians is that (1) peyote *teaches* and (2) this teaching takes place by *direct* revelation from peyote to the devotee. Over and over the answer given to inquiries about the nature of the peyote experience is that the only way to learn is directly from peyote. Slotkin writes that one of the cardinal maxims of the Native American Church is that "the only way to find out about peyote is to take it, and learn from peyote yourself"; (103) and: "It may be interesting to know what others have to say; but all that really matters is what one has directly experienced—what has been revealed to him personally by peyote." (104) John Wilson, one of the principal founders of the peyote religion, claimed that:

> The greatest teacher for the Indians is peyote communion which is possible to everyone provided he manifests the proper honesty of purpose to know peyote and learn its teachings. By eating the plant and concentrating on peyote and the ills that afflict mankind, by a proper show of humility and the desire to learn to "walk on the road," this end can be attained. Thus, each individual is to learn the doctrines of peyote through personal experience and revelation. (91)

The concept of the *direct* teaching of peyote is probably expressed most succinctly by the often-quoted statement of Quanah Parker, one of the early peyote leaders: "The white man goes into his church house and talks *about* Jesus; the Indian goes into his tepee and talks *to* Jesus. " (104)

Other statements by Indians refer to the continued capability of peyote to teach: "Peyote is a lifetime education. You will learn new things every time you attend a meeting." (41) One of Slotkin's informants, a peyotist for 30 years, claimed to be "just a beginner" in discovering what peyote had to teach. (103) The observation that peyote and its synthetic equivalent, mescaline, teach has not been limited to the Indians, as demonstrated in familiar statements by Ellis, Huxley, Osmond, and others. (46, 60, 90)

I have dealt at some length with the issue of "learning" and the psychotherapeutic effect from the use of peyote because it is an important dimension in the consideration of all hallucinogenic drugs. It is this unique claim that sets these substances apart from other drugs that alter central nervous system functioning and makes their evaluation such a complex question—one seldom hears reports of learning from alcoholic intoxication—save perhaps to observe more moderation.

Ethnological Explanation of Peyotism

Ethnologists have offered a variety of explanations for the diffusion of peyotism among the American Indians. Probably the best known is Ruth Shonle's hypothesis that the Plains Indians long had valued visions Produced by fasting and self-torture, * and accepted peyote as a more direct means to this goal. (100) At the time of her article (1925), peyo-

* See Ruth Benedict. (14)

tism was largely confined to the Plains. She postulated that an "underlying belief in the supernatural origin of visions is important among factors contributing to the diffusion of peyote and in a general way defines the area of its probable spread."

Barber (1941) and La Barre (1960) feel that Shonle's prediction has been at least partially confirmed by the subsequent diffusion of peyotism. (10, 65) The latter points out that where peyotism has spread beyond the Plains it has encountered more opposition; and, though the peyote leaders came from the old elite in the Plains, they did not do so in other areas.

Arth suggests that peyote may also appeal as a method of expressing indirect aggression toward the whites, because of the latter's continued opposition to the movement. (9) In addition, he and others have noted that the Indian nature of the peyote cult represents a return to the old way of life and a reaffirmation of in-group feelings. As evidence, Arth cites the preference for summer meetings in tepees to winter meetings in frame houses, and that the fire, drum, songs, sitting on the floor, and smoking all demonstrate strong ties with the past.

Finally, a number of writers contend that peyotism proved attractive because it was introduced at a time when the old culture was breaking up, and the Indians found themselves in an anxiety-producing transitional state between the Indian and white cultures. Thus, the peyote cult offered unity and meaning at a time when it was greatly needed. Both Arth and Spindler support this argument with evidence that the cult has been much more enthusiastically accepted by men than by women. (9, 109) They argue, along with Margaret Mead, (81) that the breakdown of culture is almost always of more vital concern to the men than to the women, who continue to bear children, cook, etc. In addition, Spindler has made detailed studies of Indian acculturation processes, and concludes that peyotism is most attractive to the person in a transitional state. (109)

Of those who view the peyote cult as an attempt to adjust to a disintegrating culture, Petrullo probably makes the most positive assessment:

> It teaches acceptance of the new world, and makes possible an attitude of resignation in the face of the probable disappearance of the Indian groups as distinct people, culturally and racially, by insisting on the necessity of emancipation from mundane aspirations. The greater goal that the Indian should attempt to attain is a loftier spiritual realm which is beyond the reach of the white to destroy. (91)

Bromberg, a physician, specifically attacks Petrullo's interpretation:

> Peyote, as with all drugs, is taken because it produces a change in the feelings and emotions of the user. Thus sedatives allay anxieties and restlessness; alcohol reduces the sharpness of frustrations; morphine and heroin ease the pain of isolation; marihuana, by producing otherworldly sensations, neutralizes the frustrations of this life. So peyote acts not so much to support a cultural drive, but as an anodyne to *ease* the pain of conflict which the clash of cultures engenders. In this sense, peyotism as spiritual therapy implies a negative attitude towards emotional problems. To seek to gain permanence for a culture

by the repression of conflicts through narcotics and mysticism is not a "constructive" way of life! (25)

The positions of Petrullo and Bromberg quite clearly delineate the two poles of the peyote issue. The former feels that the peyote cult represents a positive adjustment, though one more compatible with an Eastern than a Western value system. The latter adopts a pragmatic Western view, and feels that the ceremonial use of peyote is a non-constructive avoidance of the problem.

Frequency of Use and the Question of Addiction

The average consumption of peyote buttons at a meeting is around twelve to twenty a person according to La Barre, with occasional individuals claiming to have eaten as many as eighty to one hundred. (64) Shultes and Slotkin both report the average number to be about twelve. (117, 103) Stewart puts the average at eight to twelve, and Skinner reports that the Iowas take about two to eight. (112, 102) Women participants consume considerably less, typically from two to four buttons.

The frequency of meetings varies, the upper limit generally being once a week; meetings may be much less frequent due to lack of a host, inclement weather, or unavailability of peyote. La Barre estimates that "one or two meetings a month in each tribe might be an average number when the whole year is considered." (64) Individual attendance at meetings also varies; some persons only attend occasionally.

In rare instances a meeting will last for two or three days, particularly if the purpose is to cure a serious illness. The incidence of peyote intoxications sustained for several days is of interest because it bears on the questions of addiction or excessive use under uncontrolled conditions. Radin reports an incidence of a dramatic conversion resulting from taking peyote on three successive days, (92) and John Wilson, the principal founder of the peyote cult, withdrew to an isolated spot and took peyote frequently over a two-week period at the time of his revelations. (64) Such cases, however, are relatively rare, the normal interval between ritualistic peyote ingestion being at least a week.

Concerning non-ritual use of peyote, some tribes strictly forbid its use outside the ceremonial setting; (88) however, others use it as medicine, generally in the form of peyote tea. (103) Louise Spindler reports that in the Menomini tribe women peyotists often keep a can of ground peyote for brewing tea, which they use "in an informal fashion for such things as childbirth, earaches, or for inspiration for beadwork patterns." (no) She also mentions one woman who "takes peyote several times a week and often sinks into a state of complete withdrawal while taking it."

La Barre writes that his informants admitted "that there were some individuals who show signs of addiction, in the sense that they consumed the plant often and abundantly, but these are not clear uncomplicated instances of drug addiction." (64) In spite of occasional cases such as these, there is general agreement that peyote should not be included under the vague labels of psychologically addicting or habit-forming drugs. (66)

In a 1959 summary article on peyote in the *Bulletin on Narcotics* it was concluded: "Most of the authors consulted... including scientists, chemists, doctors, and ethnologists long familiar with these substances (peyote and mescaline) state roundly that they do not cause either habituation or addiction." (6) Also, peyote was discussed by the Twenty-First Session of the League of Nations Advisory Committee on Traffic in Opium and Other Dangerous Drugs and was not included on the list of narcotic drugs. (6) Finally, the 1962 White House Conference on Narcotic and Drug Abuse concludes that:

> Careful anthropological and sociological studies indicate that the ritualistic use of peyote does not carry with it significant danger, nor is it abused continuously.... In order to qualify this drug as an "addictive" agent one must clearly distort the definition. (121)

As mentioned above, peyote meetings are frequently a month or more apart. Individuals often try the peyote cult for a period and then drop out, and though peyotism has steadily increased, there are tribes where it has flourished and then completely disappeared. (89, 112)

Physical Effects

Peyote often causes nausea and vomiting, but otherwise the immediate physiological effects are minor compared to the psychological. The major concerns are the long-term physiological effects resulting from repeated use, and more especially the incidence of psychoses. Unfortunately, there has never been a medical study of the long-term effects on humans, in spite of the fact that the question has been raised repeatedly at the many legal hearings. The 1944 Congressional Hearing Committee specifically recommended that such a study be conducted and the Taos Indians offered to provide the subjects. (117) Thus, information is limited to the observations of ethnologists, and the pro and con testimony at the legal hearings.

The issue of the effect of peyote on physical health is somewhat clouded by the Indians' practice of doctoring severe illnesses in meetings. Stewart reports that the anti-peyotists among the Washo and Paiute Indians claimed a number of deaths resulted from peyote, and the government doctor made several post-mortem investigations:

> All believers allegedly killed by peyote demonstrably suffered from disease or senility which might at any moment have brought death and which figured as the cause in official reports. It is probable, however, that the rigors of peyote meetings hastened the deaths of a few dangerously ill individuals. (112)

Most observers regard the introduction of alcohol to the Indians to be much more devastating than peyote. (94) This seems likely, since alcoholism involves frequent intakes of large amounts of alcohol, and is known to cause various physical pathologies, whereas peyote is typically taken at much less frequent intervals.

Turning now to the question of psychosis, there are a few reports by

ethnologists of acute psychotic incidents. Radin mentions a case of temporary paranoia, and Stewart describes a psychotic incident in a man competing for leadership of the group (92, 112). La Barre reports that several natives "gave up the use of peyote entirely upon the rising of special or acute anxieties." (64)

Missionaries and anti-peyote Indians have made a number of claims of more lasting insanity resulting from taking peyote. Typically the claims are of a vague and general nature, but some cite specific cases. Stewart writes:

> Two were sent to institutions after attending peyote meetings.... Altogether seven were judged by the unconverted as completely crazy because of peyote, and three others temporarily deranged... in all cases but one, government records revealed long histories of mental instability. The exception possessed unmistakable delusions of grandeur, believing himself the son of God and ruler of the western Indians. (112)

Bromberg, who studied the relations of marihuana and psychosis (see the following section), also speculated on peyote-induced psychosis. (25) He writes, "It is to be expected that, in view of the universal anxiety reaction under peyote, these states of apprehension may attain the intensity of a psychotic picture." He relates one known case of acute psychosis following peyote intoxication; the patient was hospitalized, and showed improvement in two weeks.

Alcoholism and Peyote

Alcohol was introduced to the Indians by the whites and soon became a serious problem, not only in this country but in Central and South America as well. (27) Some of the early leaders in the peyote cult were alcoholics prior to being converted to peyote, and subsequently became strict prohibitionists. (64) They instructed their followers on the evils of alcohol, and abstinence soon became a part of the "Peyote Road." The present-day Native American Church continues to stress abstinence from alcohol. (104)

Apparently the prohibition on alcohol was relatively effective because even the anti-peyotists grudgingly conceded that members abstained. A typical anti-peyote testimony in Congress reads, "The Indian has also been taught that it is a cure for the liquor habit. And true it is many drunkards have eaten mescal, and have stopped drinking liquor, but mescal is merely a more dangerous and potent substitute." (118)

The ethnologists are more positive in their assessment. Malouf notes that "Almost all peyote members abide by prohibition of alcohol and the few who do not enjoy little prestige." (74) Skinner writes that "The effect of peyote eating on the Kansa has been to abolish drunkenness among its followers." (102) Finally, a Native American Church statement for a Congressional hearing draws an interesting comparison: "Peyote is a great element in our religious ceremonies and not a habit-forming drug or intoxicant. Intoxicant liquor is made by the white man and no doubt for

some special purposes which we do not know... Those of us who use peyote do not drink whiskey." (118) La Barre, however, notes that in Mexico peyote is often mixed with alcoholic drinks, and also mentions several cases where peyote cult members drank alcohol between meetings. (62, 64) Radin writes as follows about the Winnebagos:

> So completely did peyote users give up drinking that at first it was supposed that this was a direct effect of the peyote. This is, however, an error. John Rave, leader of the cult, gave up drinking when he became a convert and included this renunciation of all liquor in the cult... When Rave's personal influence decreased, and as membership increased, the number of people who drank liquor and ate peyote at the same time increased. (92)

The Spindlers collected data on drinking behavior from their small sample of peyotists among the Menomini. (109, 110) Forty-five percent of the peyotists abstained, in comparison to 26 percent of the non-peyotists. While the peyotists drink somewhat less than the others, it is clear that the prohibition is not completely effective. It would be of interest to obtain similar comparative statistics for other peyote groups.

Aphrodisiac or Anaphrodisiac

The fantasy that sex, sin, and narcotics are inextricably intertwined is firmly entrenched in our culture, and writers for the popular news media continue to link sexual abandon (*The Reporter),* wife-swapping (*The Ladies' Home Journal),* and the like with present-day hallucinogenic drugs. (55, 52)

La Barre calls the sexual accusation leveled at the peyote cult a "flat and unqualified untruth" (217) and further writes:

> It is a curious west-European mode of reasoning that leads one to expect in all psychic upsetments such as this the emergence of the sexual anxiety—more particularly in the case of peyote intoxication, which provokes marked fall of heart-beat, physical and mental depression at one stage, uncomfortable "stomach fullness" and acute nausea! (64)

Klüver feels peyote has no sexual effect (61), but a number of other observers indicate it acts as an anaphrodisiac. (26, 72, 91, 118) Fernberger, a psychologist, conducted an experiment on the subject. (48) He used nine university professors as subjects and conducted an all-night group "meeting," complete with drums and rattles. Subjects consumed from three to seven buttons. Under these conditions, Fernberger found peyote to be a "strong anti-aphrodisiac."

> For every one of the observers, the anti-aphrodisiac effect of the drug was marked and continued, in most cases, for at least 24 hours after the period of intoxication. (In one case it lasted 72 hours.) Efforts at erotic stimulation proved ineffective. In several cases physical automanipulation of the genitals failed to produce the usual physiological effect. The calling up of erotic images—visual and verbal—was equally ineffective.

Although Fernberger's setting will undoubtedly never be rated very high by students of erotica, and probably says more about the naivete of the experimenter than it does about peyote, it is nevertheless science's one contribution to the subject.

As far as I have been able to determine, the only persons who find peyote to be a reliable aphrodisiac are missionaries and magazine writers. The Reverend R. H. Harper successfully follows the rules of logic but is tripped up by a faulty premise:

> We are thoroughly convinced that the use of peyote leads to immorality sexually. Given: a drug which stimulates the sexual passions, and at the same time decreases the will power as to resistance, and the inevitable result is immorality in action. (59)

An example of the way our news media describe peyotism is contained in *Time* as late as 1951:

> The Navajos, already wretched in their poverty and disease, were easy prey for peyote peddlers... One "peyote hassle" has been described by a paleface intruder... it was "every man for himself." Men hopped up with peyote, he reported, "are likely to grab the closest female, whatever age, kinfolk or not." There have been many reports of sex crimes, some against children, committed under the influence of peyote. (116)

Social and Economic Aspects of Peyotism

There are no consistent socio-economic differences between the peyotists and other Indian groups. Stewart rated 1,000 Washo-Paiute Indians from poor to prosperous and from lazy to energetic. (112) Twenty-five percent were peyotists (attended two or more meetings) but only nine percent were active. He concluded that the ratings showed no difference between the two groups, and "that peyotism attracted a proportionate number of all the exceptional individuals in the Washo-Paiute community." Peyotism has met heavy opposition among the Taos, but in 1960 Dustin states that 300 of the 900 Taos Indians are peyotists and "command most of the important religious and civic offices of the Pueblo, including that of governor." (41) Spindler rated the socio-economic status of a small minority of Menomini peyotists along with four other groups: native-oriented, transitional, acculturated and elite-acculturated. (109) The peyotists rated above the native-oriented group, but below the other three.

There is general agreement that the peyote cult played a prominent role in breaking down tribal barriers. La Barre, Slotkin and others have noted that all Indians are welcome to peyote meetings and a great deal of intertribal visiting takes place, often with a half-dozen or more tribes represented at a single meeting. (64, 103) Within individual tribes, however, peyotism sometimes encountered strong opposition. Stewart describes the Washo-Paiute relations as follows:

> Although only a relatively small number ever espoused peyotism, its effects on the group were considerable... The vehemence of di-

> vergent opinions causes a distinct rift in Washo-Paiute communities. Old friends and neighbors are separated, families broken up. Whole communities are divided. (112)

As mentioned earlier, the Taos in New Mexico have had an especially long and bitter struggle over peyotism, with the tribal government jailing peyotists on some occasions. (89)

When peyotists are a minority they often form closely united groups that relate only minimally with non-peyotists in the same tribe. (109, 112) How much this is due to the persecution of outsiders as opposed to the in-group comradeship engendered by the peyote religion is not clear. Peyote cult members are generally credited with adopting a rather charitable and non-aggressive attitude toward their opponents; (91, 104) however, Stewart mentions one Indian who, "confident of supernatural protection for the peyotists, suggested that the members and non-members line up and 'shoot it out.'" (112)

Long-Term Personality Aspects of Peyotism

There are only two studies in this area. One hypothesized that the more psychologically disturbed Indians would be attracted to the peyote cult as an adaptive device, and would experience more "bad dreams" than the non-peyotists. (40) The results were inconclusive.

A much more thorough study was undertaken by the Spindlers, using the Rorschach test. (108, 109, 110) They obtained highly significant differences between the male peyotists and non-peyotist groups, with as many as 13 of 21 indices being differentiated at the .05 level of confidence. The female peyotists showed similar patterns, but the differences were not so marked.

The psychological interpretation of projective test results for cultures other than those on which the norms were developed is a hazardous undertaking. Spindler acknowledges this difficulty, but offers the following interpretations of the peyote group results:

> The peyote personality tends to be one in which there is a high degree of self-projective fantasy which, in a setting of anxiety, introspection, and looseness of control, is interpretable as a self-doubting rumination, however much it may represent a relative increase in creative imagination. This type of projection appears at relative cost in the degree of freedom in expression of biologically oriented drives. The personality tends to be subject to unsystematized anxiety, and apparently there is a tendency to attempt resolution of it by introspection. There is a relative looseness of control exerted over emotional responses. (109)

Spindler concludes that there is some evidence that deviant persons gravitate to the cult, but that the unique Rorschach protocols for male peyotists cannot be explained in this manner. Members apparently undergo personality changes as a result of their participation. *

* An alternative interpretation is that a familiarity with peyote visions might influence the patterns seen in Rorschach blots.

Legal History of Peyotism

The legal history of peyotism is quite lengthy and can only be summarized here. * The federal opposition to peyotism was spearheaded by the Indian Bureau which made several unsuccessful attempts, beginning in 1908, to have peyote included in the Liquor Suppression Act. This was accomplished in 1923 and repealed in 1935. Slotkin lists a series of nine Congressional bills to prohibit peyote from 1916 to 1937, all of which were defeated. (104) The Department of Agriculture passed a regulation prohibiting the importation of peyote in 1915; the regulation was rescinded in 1937. Similarly, the Post Office banned shipment of peyote through the mails in 1917, and rescinded the ban in 1940. Peyote was included as a habit-forming drug in the Narcotic Farm Act of 1929 to allow treatment of peyote addiction. So far, no "peyote addict" has availed himself of this service. (121) Also, peyote was defined as a narcotic in the Federal Food, Drug and Cosmetic Act for the purpose of labeling. However, peyote has been excluded from all federal narcotic acts.

According to Slotkin and Stewart, the Indian Bureau acted in a "highly ethnocentric and autocratic" manner during this period (1900-1934), and was very much influenced by the Christian missionaries whose competitive role hardly placed them in a disinterested position. (104, 111) Slotkin also accuses the Bureau of numerous extra-legal maneuvers in its effort to suppress peyotism. In 1925, the Bureau published an anti-peyote pamphlet that is probably one of the most propaganda-laden documents ever presented in the guise of an objective study. (87)

In 1933, John Collier became Commissioner of Indian Affairs and was instrumental in bringing about a more tolerant attitude toward peyotism. Since 1937, opposition at the federal level has largely disappeared although a bill to make peyote illegal was introduced in the House as late as 1963. (38) In 1949, in response to a request to the American Medical Association from the Secretary of the Interior for a survey on medical care among the Indians, Braasch, Branton and Chesley made the following comment:

> The use of peyote has been a problem among Indians for many years. . . . Unfortunately, the Indian Bureau permitted the use of peyote among the Indians several years ago on the grounds that it was part of an Indian religious ceremony... It is high time that the sale and possession of this drug be restricted by a national law. It is a habit-forming drug and acts on the nervous system as a stimulant and narcotic. The drug usually is taken prior to festival dances and causes excessive stimulation for several hours. The following day the addict is left in an exhausted condition and is incapable of physical exercise or labor. ** (21)

* For a thorough discussion, see Slotkin's *The Peyote Religion.* (104)

* * According to Brant, the American Medical Association states that the position taken by Braasch, *et al.,* does not represent the official stand of the American Medical Association; and, in fact, no official position has been taken regarding peyote. (22)

The authors do not provide the source of their information, but it appears to be somewhat unreliable, or at least dated. The use of peyote "prior to festival dances" was prevalent in Mexico in the nineteenth century, but has never been a part of the Plains ceremony.

At the state level, anti-peyotist legislation has been more successful. Slotkin lists 14 states that passed laws against peyote between 1917 and 1937. (104) However, with a few exceptions, no effort has been made to enforce these laws, and most now have been repealed or modified to permit ritual use by Indians. Recent action by the State Supreme Courts of Arizona and California have virtually eliminated resistance at the state level. (41, 114)

Use of Peyote by Whites

At the time peyote attracted medical attention around 1900, several warnings were issued by physicians that it might prove dangerously attractive to whites as well as Indians. Weir Mitchell predicted "a perilous reign of the mescal habit when the agent becomes attainable, (84) and Havelock Ellis agreed that "there is every likelihood that mescal will become popular." (45) Ellis himself was attacked in an editorial in the *British Medical Journal* for painting too attractive a picture of the "artificial paradise." (90) The popular press joined in with lurid warnings on the "gigantic problem of spread to whites of this 'dry whiskey.'" (70) In 1933, a Swiss pharmacy embarked on an advertising campaign for "Peyotyl" which was to "restore the individual's balance and calm and promote full expansion of his faculties. "* (6)

Nevertheless, peyote has never achieved much acceptance outside the Indian population. Guttman states, "Experience has shown that the authors who thought that the pleasant state of intoxication produced by mescaline would speedily lead to addiction were wrong." (58) La Barre and Smith mention short-lived attempts to establish peyotism among the Negro, (64, 107) but otherwise its use seems to have been primarily limited to occasional experimentation by the curious.

In a recent study based on interviews with hospitalized drug addicts, Ludwig and Levine found that use of peyote and mescaline among opiate addicts is infrequent; some regular marihuana, amphetamine and barbiturate users engage in weekend parties with the stronger hallucinogens; and a few persons were found to take them exclusively, and at frequent intervals, for fairly long periods of time. (71) However, the abuse of peyote and mescaline is considered to be minor in comparison to other drugs. The 1962 White House Conference on Narcotic and Drug Abuse concludes:

* This case drew the attention of the League of Nations Advisory Committee on Traffic in Opium and Other Dangerous Drugs in 1936. The Swiss Federal Public Health Service subsequently recommended that "it would be advisable to allow 'Peyotyl' to be supplied only on medical prescription." (6)

> In spite of lurid statements by some popular writers, this drug appeals to only a few individuals other than the American Indian.... Like other hallucinogens in the lysergic acid series, abuse of mescaline has comparatively little national significance. (121)

It is an interesting fact that the use of marihuana, which is illegal, is fairly widespread and increasing, while the much more potent hallucinogens, peyote and mescaline, are seldom employed by whites. This is true, even though peyote may be legally ordered through the mail in most states, and until recently mescaline was also fairly easy to obtain.

III. CANNABIS

History and Description

The cannabis or hemp plant is probably indigenous to Central Asia and has a very long history. According to Taylor, it was described in Chinese literature in 2737 B.C. and introduced into India prior to 800 B.C. (115) The drug cannabis is obtained from the flowering tops of the female plant, and it was used very early in China as an analgesic in surgery. It has had wide use in indigenous medicine, especially in India, and to some extent in modern medicine beginning about i860; however, it is now considered obsolete.

The use of cannabis as an intoxicant was well known in India by the ninth or tenth century and some authors place the date considerably earlier. (119) From India, it spread to North Africa and then to Europe around 1800. It has a fairly long history in Mexico and Latin America, but was not introduced into the United States to any appreciable extent until about 1920. Cannabis currently grows wild in almost all countries and is cultivated for the drug in many. It is used throughout the world as an intoxicant in various degrees—a survey sponsored by the United Nations in 1950 estimated world-wide usage by 200 million persons, the large majority of them in Asia and Africa. (77)

The potency of cannabis as an intoxicant varies widely, depending on climate, cultivation, and methods of preparation for use. There are three grades prepared in India. Bhang is cheap, low in potency and usually ingested as a drink; ganja is two to three times as strong; the most potent is charas, the unadulterated resin obtained from the plant or dried flower. (30) Smoking is the most common mode of consumption for ganja and charas. Cannabis preparations have many other names in various parts of the world—in Morocco it is called kif, in South Africa dagga, and in the United States and Latin America marihuana. These correspond roughly in potency to the bhang of India, though they are mostly smoked rather than ingested. The term hashish, when used correctly, is a powdered and sifted form of charas, or a preparation made from it; however, hashish is widely used in the literature to refer to any form of the cannabis drug. The marked differences in potency among the various preparations are probably responsible for some of the discrepancies between Eastern and

Western findings that will be discussed later. From a consensus of several reports, the marihuana available in the United States is estimated to be one-fifth to one-eighth as potent as the charas resin of India. (16, 30, 79, 119)

The active ingredient of cannabis has been identified as tetrahydrocannabinol, but the chemistry is extremely complex and not completely understood. (54) Some 80 derivatives of tetrahydrocannabinol have now been synthesized and studied pharmacologically, and most are active in various degrees.

Cannabis Intoxication and Its Similarity to That of Peyote and LSD

Pharmacology texts invariably classify cannabis as an hallucinogen, along with LSD, mescaline and psilocybin. Recent interest, however, has concentrated on the last three, probably because the "model psychosis" hypothesis grew out of work with these more potent hallucinogens. Also, those interested in examining the therapeutic effects of these agents have preferred to avoid the stigma attached to marihuana. On examining descriptions of cannabis intoxication, however, it is clear that virtually all of the phenomena associated with LSD are, or can be, produced with cannabis. (5, 17, 119) The wavelike aspect of the experience is almost invariably reported for cannabis as well as for all the other hallucinogens. Reports of perceiving various parts of the body as distorted, and depersonalization, or "double consciousness," are very frequent, as well as spatial and temporal distortion. Visual hallucinations, seeing faces as grotesque, increased sensitivity to sound, and merging of senses (synesthesia) are also common. Heightened suggestibility, perception of thinking more clearly, and deeper awareness of the meaning of things are characteristic. Anxiety and paranoid reactions may also occur. Walton writes:

> The acute intoxication with hashish probably more nearly resembles that with mescaline than any of the other well-known drugs. Comparison with cocaine and the opiates does not bring out a very striking parallelism. With mescaline and hashish there are numerous common features which seem to differ only in degree. (119)

The difference between cannabis and the other hallucinogens must be understood in terms of the motivation of the user as well as the strength of the reaction. This is not to say that the set of the user is not very important for the others as well, but cannabis is especially amenable to control and direction so that the desired effects can usually be obtained at will. Michaux, a French writer, has repeatedly explored his own reactions to the various hallucinogens and writes: "Compared to other hallucinogenic drugs, hashish is feeble, without great range, but easy to handle, convenient, repeatable without immediate danger." (83) It is these features, plus the fact that consumption by smoking enables the experienced user to accurately control the amount absorbed, that makes cannabis a dependable producer of the desired euphoria and sense of well-being.

This aspect is pointed up in the study by the New York City Mayor's

Committee which examined the reaction of experienced users to smoking and ingesting marihuana extract. (79) The effect from smoking was almost immediate, and the subjects carefully limited the intake to produce the desired "high" feeling. They had no difficulty maintaining a "euphoric state with its feeling of well-being, contentment, sociability, mental and physical relaxation, which usually ended in a feeling of drowsiness." When ingested, the effect could not be accurately controlled and, although euphoria was the most common experience, users also frequently showed anxiety, irritability, and antagonism. It is common knowledge among marihuana users that one must *learn* to use the drug effectively, and that beginners often are disappointed in the effect. (12)

With the much stronger and longer lasting hallucinogens, LSD and mescaline, there is much less control and direction possible, and even the experienced user may find himself plunged into an agonizing hell. As indicated by some of Ludwig and Levine's subjects, the effect of the stronger hallucinogens is "more like an ordeal than a pleasure." (71) In summary, it appears that the reaction to cannabis is on a continuum with the other hallucinogens and, given the same motivation on the part of the user, will produce some of the same effects. On the other hand, cannabis permits a dependable controlled usage that is very difficult if not impossible with LSD and mescaline.

One distinct difference that does exist between cannabis and the other hallucinogens is its tendency to act as a true narcotic and produce sleep, whereas LSD and mescaline cause a long period of wakefulness. One other very important difference from the sociological standpoint is the lack of rapid onset of tolerance that occurs with hallucinogens other than cannabis. The cannabis intoxication may be maintained continuously through repeated doses, whereas the intake of LSD and mescaline must usually be spaced over several days to be effective. In addition, the evidence on the use of these drugs indicates that, although the mild euphoria obtained from cannabis may be desirable daily, or even more frequently, the overwhelming impact of the peyote and LSD experience generally results in a psychological satiation that lasts much longer than the tolerance effect.

Motivation

In this country marihuana users almost invariably report the motivation is to attain a "high" feeling which is generally described as "a feeling of adequacy and efficiency" in which mental conflicts are allayed. (79) The experienced user is able to achieve consistently a state of self-confidence, satisfaction and relaxation, and he much prefers a congenial group setting to experiencing the effects alone. Unlike the reasons the Indian gives for taking peyote, the marihuana user typically does not claim any lasting benefits beyond the immediate pleasure obtained.

In India and the Middle East, cannabis is apparently taken under a much wider range of circumstances and motivations. The long history, Wide range of amount used, and the fact that legal restrictions do not re-

quire its concealment permit investigation under a variety of conditions. Most Eastern investigators draw a clear distinction between the occasional or moderate regular user and those who indulge to excess. Chopra states that cannabis is still used fairly extensively in Indian indigenous medicine, and that it is also frequently taken in small quantities by laborers to alleviate fatigue. (29) In certain parts of India this results in a 50 percent increase in consumption during the harvest season. Chopra writes:

> A common practice amongst laborers engaged in building or excavation work is to have a few pulls at a ganja pipe or to drink a glass of bhang towards the evening. This produces a sense of well-being, relieves fatigue, stimulates the appetite, and induces a feeling of mild stimulation, which enables the worker to bear more cheerfully the strain and perhaps the monotony of the daily routine of life.

Similarly, Benabud found kif used by the country people in Morocco, in moderation, to "keep spirits up." The need for moderation is expressed in the folk-saying, "Kif is like fire; a little warms, a lot burns." (13) Bhang is also frequently used as a cooling drink or food supplement. (29)

The habitual use of cannabis as an intoxicant is also considerable, although Chopra states that it has gradually declined over the past thirty years, and "at the present time it is almost entirely confined to the lower strata of society. Amongst the upper and middle classes, the use of cannabis is nowadays considered to be derogatory, in spite of the fact that the practice was held in great esteem in ancient India, and early literature is full of references to the virtues of this drug." (29) Chopra found that the amount used today is only one-fourth of that consumed around 1900, and that the decline is largely due to government reduction of the area under cannabis cultivation, and to higher excise duty. He estimates the current number of regular users to be between 0.5 and 1.0 percent of the population.

Cannabis also has a long history of religious use in India, being taken at various ceremonies and for "clearing the head and stimulating the brain to think" during meditation. (29) It also plays a prominent role in the religions of certain primitive African and South American tribes. (86) In India, the religious use of cannabis is by no means always moderate. Chopra writes, "The deliberate abuse of bhang is met with almost entirely among certain classes of religious mendicants." (29)

Cannabis is widely believed to have aphrodisiac properties. Bouquet states that in North Africa the belief that cannabis will preserve, maintain or improve sexual powers is an important initiating cause of the habit. (17) In a sample of some 1,200 users, Chopra found that 10 percent listed sexual factors as the exciting cause leading to the cannabis habit. (30) While cannabis intoxication may be sexually stimulating to some people, several authors have claimed that prolonged and excessive use will eventually cause impotence. (13, 17, 29)

In the United States, two studies of the use of marihuana in the Army produced conclusions that it frequently led to various homosexual and heterosexual perversions. (28, 76) On the other hand, the Mayor's

Committee, in New York City, concluded "that in the main, marihuana was not used for direct sexual stimulation." (79) Their conclusions were based on the findings of six men and women, members of the police force, who, for a period of one year, posed as marihuana users, and visited numerous intimate marihuana gatherings and "tea pads," some of which were also brothels. The experimental portion of the study found that in 10 percent of the 150 marihuana administrations there was some evidence of eroticism. Whatever aphrodisiac qualities cannabis may possess, virtually all investigators agree that these are cerebral in nature, and due to the reduction of inhibition and increase of suggestibility. It is probable that cannabis is little, if any, more effective than alcohol in this respect. In fact, Chopra writes, "Amongst profligate women and prostitutes bhang-sherbet used to be a popular drink in the course of the evening when their paramours visited them. This practice has, however, been largely replaced by the drinking of alcohol which is much more harmful." (30) Chopra also mentions that certain "saintly people who wish to renounce worldly pleasure use cannabis drugs for suppressing sexual desires." (29)

One final motivation should be mentioned—that of musicians who feel that marihuana improves their ability. Walton writes, "The habit is so common among this professional group that it may properly be considered a special occupational hazard." (119) Aldrich and Williams both found that experienced marihuana users perform worse on musical tests under the effects of the drug, whereas the self-evaluation of the subjects indicated that the majority felt that they had performed better. (3, 122) Williams did report, however, that three out of twelve subjects tested showed "marked improvement" in auditory acuity. Morrow found no change in either musical performing ability or auditory acuity. (79)

In addition to the stated motivations for using cannabis, evaluations of the underlying sociological and psychological basis are of interest, particularly in instances of excessive indulgence. In this country there is very little evidence of excessive use on the scale of some groups in the East; there is general agreement, however, that the majority of regular marihuana users suffer from basic personality defects. The study by the Mayor's Committee in New York City found that most marihuana users "were unemployed and of the others most had part-time employment." (79) This study also administered extensive personality tests to 48 users and 24 non-users. The subjects were prisoners, and therefore the sample is somewhat biased; it was found, however, that the user group, when undrugged, was differentiated from the non-user group by greater emotional inhibition and introversion. Maurer and Vogel characterize the marihuana user as follows:

> Most of them appear to be rather indolent, ineffectual young men and women who are, on the whole, not very productive.... Most habitual users suffer from basic personality defects similar to those which characterize the alcoholic. (77)

According to the literature, most marihuana users come from the lower socio-economic classes and there is a preponderance of Negroes and

Latin Americans. (79) Four studies of marihuana use in the Army found 90 percent or more of the samples were Negro. (28, 50, 51, 76) In recent years there appears to be an increasing use of marihuana by college students, and by middle and upper class groups in certain urban centers.

In the Eastern countries, most investigators regard the occasional or regular but moderate use of cannabis in about the same way as the moderate use of alcohol is considered in this country. Excessive indulgence, however, particularly with the more potent preparations, is invariably considered indicative of serious personality defects. As in the United States, the majority of users are in the lower socio-economic classes.

Benabud stresses that the major problems with cannabis in Morocco exist among the urban slum dwellers, especially among those who have newly come from the country and are "no longer buttressed by traditional customs." (13) By contrast, he points out that although kif is widely used among the country people, there is no sign of compulsive need, such as exists "among the uprooted, and poverty-stricken proletariat of the large town." Benabud also cites individual psycho-pathological factors as prominent causes of excessive indulgence:

> The mental attitudes and behavior usual in the emotionally immature are extremely common—prevalence of the imaginary over the real, of the present over the future, with the impulsive need of the habitually frustrated for immediate satisfaction of desire.... Thus, the importance and the frequency of constitutional predispositions are clear, a fact which justifies the adaptation of the well-known saying, "You are a kif addict long before you smoke your first pipe."

Frequency of Use and the Question of Addiction

The confirmed user takes cannabis at least once per day; however, many others indulge only occasionally. There are no statistics on the ratio of regular to occasional users, but Bromberg found that only a small proportion of those who smoked marihuana in New York used it regularly. (24) Of those who use it regularly in the United States, most report they have voluntarily or involuntarily discontinued the habit from time to time without difficulty. (79)

Several studies have reported that the average number of marihuana cigarettes smoked by regular users in the United States is around 6 to 10 per day. (28, 79, 122) Two experiments in which regular marihuana users were encouraged to consume as much as desired found no evidence of tolerance or withdrawal symptoms. (101, 122)

Chopra collected detailed statistics on a sample of 1,200 regular users in India. (30) Seventy percent had practiced the habit for more than ten years. Seventy-two percent used only cannabis, while the others also took alcohol, opium, or other drugs. Most of those using the bhang drink did not take excessive amounts, but 46 percent of the ganja and charas smokers consumed in excess of 90 grains a day (18 percent used in excess of 180 grains). More than half of both groups used the drug two or more times a day.

Benabud states that in Morocco confirmed kif smokers consume from 20 to 30 pipes a day, and 40 to 50 is not infrequent. (13) As mentioned at the beginning of this section, marihuana available in the United States is, at most, only one-fifth as potent as charas and probably about one-third as potent as ganja. An average consumption of eight marihuana cigarettes (0.5 gram each) a day would thus be roughly equivalent to 12 grains of charas or 21 grains of ganja. When we consider that almost one-half of the ganja and charas smokers in Chopra's sample used from 90 to 360 grains per day, it is clear that the average consumption of marihuana by regular users in the United States is very mild in comparison.

Regarding the question of addiction to cannabis, most investigators agree there is generally no physiological dependence developed and only slight tolerance. This applies particularly to the moderate use observed in the United States. In the New York City Mayor's Committee study, the officers who posed as marihuana users found no evidence of compulsion on the part of the users—there was no particular sign of frustration or compulsive seeking of a source of marihuana when it was not immediately available. (79)

Concerning the use of cannabis in India, Chopra writes:

> The tolerance developed both in animals and man was generally slight, if any, and was in no way comparable to that tolerance developed to opiates. Its occurrence was observed only in those individuals who took excessive doses, after its prolonged use.... Habitual use of bhang can be discontinued without much trouble, but withdrawal from ganja and charas habits, in our experience, is more difficult to achieve, and is sometimes accompanied by unpleasant symptoms, though they are negligible compared with those associated with withdrawal from opiates and even cocaine. (29)

Chopra writes that many persons indulge in the milder bhang drinks in summer and discontinue it during the winter. (31) In Morocco, Benabud found that kif smokers did not show progressively increasing consumption, habituation was not appreciable, only about one-third of the smokers used it regularly, and withdrawal was not usually followed by psychic or somatic effects. (13) The only report differing from these findings is one by Fraser, who indicated rather severe withdrawal symptoms in nine Indian soldiers addicted to ganja. (49)

Physical and Mental Effects

Some features of the cannabis intoxication have already been discussed. When taken orally, the effects begin in one-half to one hour and usually last from two to four hours. The effects of smoking are almost immediate and typically last from one to three hours. The safety factor is enormous; Walton lists only two deaths due to overdoses which have been reported in the literature. (119)

The Mayor's Committee administered a wide range of physical, mental and personality tests to 72 prisoners under the effects of various dose levels, both ingested and smoked. (79) The physiological effects

were minimal—increased pulse rate, hunger and frequency of urination. The major psycho-motor effect was decreased body and hand steadiness. Intellectual functions were impaired, and the effect was greater in relation to complex tasks, large doses and non-users. Emotional and personality measures showed increased feelings of relaxation, disinhibition, and self-confidence, but basic personality structures did not change.

Although the dominant emotional reaction is euphoria, acute intoxication can cause anxiety, panic, and paranoid reactions. Six of the subjects in the Mayor's Committee study experienced such episodes, lasting from three to six hours, all occurring after the drug was ingested rather than smoked.

The Mayor's Committee compared the 48 users and 24 non-users from the standpoint of mental and physical deterioration resulting from long-term use of marihuana. They also conducted detailed quantitative measures on 17 of those who had used it the longest (mean 8 years, range 2 to 16; mean dose per day 7 cigarettes, range 2 to 18). They concluded that the subjects "had suffered no mental or physical deterioration as a result of their use of the drug." (79) Freedman and Rockmore also report that their sample of 310 subjects, who had used marihuana for an average of seven years, showed no mental or physical deterioration. (50)

In India, the study of the mental, moral and physical effects of cannabis has had a long history, beginning with a seven-volume report issued by the Indian Hemp-Drug Commission in 1894. Their conclusions, as quoted by Walton (119), are as follows:

> The evidence shows the moderate use of ganja or charas not to be appreciably harmful, while in the case of bhang drinking, the evidence shows the habit to be quite harmless.... The excessive use does cause injury... tends to weaken the constitution and to render the consumer more susceptible to disease.... Moderate use of hemp drugs produces no injurious effects on the mind... excessive use indicates and intensifies mental instability.

The commission continued, as quoted by Chopra: (30) "It (bhang) is the refreshing beverage of the people, corresponding to beer in England, and moderate indulgence in it is attended with less injurious consequences than similar consumption of alcohol in Europe. This view," Chopra writes, "has been corroborated by our own experience in the field. "

Chopra provides numerous statistics on the effect of cannabis on health in terms of dose size and mode of consumption. (30) In the previously mentioned sample of 1,200 regular users, there was a distinct difference in the effects on health, as reported by the user, depending on the amount consumed. For those using less than ten grains, none claimed impairment of health, whereas 75 percent of those using in excess of 90 grains per day indicated some impairment.

The most common physical symptom found by Chopra was conjunctivitis (72 percent); this effect is frequently reported by other in-

vestigators and is a well-known means of detecting cannabis users. Chopra often found chronic bronchitis among ganja and charas smokers, as well as a higher-than-average incidence of tuberculosis. Various digestive ailments were reported; habitual use of large doses resulted in defective nutrition and a deterioration of general health. The fact that excessive use and the resulting impairment of health is much more common among users of the more potent preparations (ganja and charas) has been recognized by the various governments, and the use of charas is now illegal in all countries. (17) Bhang and comparable preparations in other Eastern countries are often legal, but the cultivation and sale of cannabis are generally controlled by the government.

Turning now to the relation between cannabis and psychosis, it is well established that transient psychotic reactions can be precipitated by use of the drug and, in susceptible individuals, this may occur even with moderate or occasional use. Out of a total of 72 persons used as experimental subjects, the Mayor's Committee reported three cases of psychosis: one lasted four days, another six months, and one subject became psychotic two weeks after being returned to prison (duration not noted). (79) The Committee concludes that, "Given the potential personality make-up and the right time and environment, marihuana may bring on a true psychotic state." On the other hand, Freedman and Rockmore report no history of mental hospitalization in their sample of 310 subjects who had an average of seven years usage. (50) Similarly, the United States Army investigation in Panama found no report of psychosis due to marihuana smoking in a sample of several hundred users over a period of one year. (101)

Bromberg reported on thirty-one cases admitted to the hospital as a result of using marihuana. (23, 24) Fourteen were described as cases of "acute intoxication" that lasted from several hours to several days and was often accompanied by severe anxiety or hysterical reaction and transient panic states or depressions.

In India and other Eastern countries, cannabis has long been considered an important cause of psychosis, and many of the early authors classified 30 to 50 percent of hospitalized mental cases as cannabis psychosis. (119) It is now considered that the causal effects of cannabis were somewhat exaggerated, but there is general agreement among Eastern writers that the drug plays a significant role in the precipitation of transient psychoses. Benabud cites the following data on psychiatric admissions to one hospital in Morocco: in the two-year period (1955-1956), 25 percent of the some 2,300 male admissions were diagnosed as "genuine" cannabis psychoses; 70 percent of the total admitted to smoking kif while one-third were regular users. (13) Since the incidence of cannabis users in Morocco is estimated to be considerably less than 10 percent of the population, it is clear that there is a definite associative, if not causative, relationship between cannabis and psychosis. Benabud estimates that of the total population of kif smokers, the number "suffering from recurrent mental derangement" is not more than five per thousand. Of Chopra's sample of 1,200 regular users, 13 were classified as psychotic. (30) Ben-

abud especially stresses excessive use and environmental factors, pointing out that the rate of psychosis among the country people who are moderate smokers is only one-tenth that of smokers in the large cities.

Benabud classifies the cannabis psychosis as acute or subacute (74 percent), residual (17 percent) and psychical deterioration (9 percent). He describes the first category as usually resulting from a sharp toxic overdose and lasting for several days. The main features are excitation and impulsivity which may produce acts of violence. Sometimes there are continuing disassociations, or "spectator ego," and delusions of grandeur, especially those of identification or kinship with God. Patients in the residual classification have longer lasting syndromes, including schizophrenic-like withdrawal, mental confusion and mild residual hallucinations. There is little tendency for symptoms to become organized and to proliferate, but rather for them to disappear gradually after a few months. The third class (cannabis deterioration) is described as the result of prolonged, excessive use of cannabis, resulting in precocious senility and over-all physical and mental deterioration. "These are the old addicts, exuberant, friendly, kif-happy vagabonds, often oddly dressed, and living by begging."

Bouquet thinks that the fact that male hospitalized psychotics outnumber females three to one in North Africa is a consequence of cannabis use being almost entirely restricted to males. (17) He considers charas to be much more dangerous in this regard than the milder forms of cannabis, and states that the incidence of cannabis psychosis has appreciably declined because charas is now prohibited and only the "raw cannabis ends" are used.

The chronic cannabis psychosis reported by Eastern writers has not been observed in this country. Most Western authors, while recognizing the role of cannabis in precipitating acute transient psychoses, have questioned the causal role in chronic cases. Mayer-Gross writes: "The chronic hashish psychoses described by earlier observers have proved to be cases of schizophrenia complicated by symptoms of cannabis intoxication." (78) Allentuck states that "A characteristic cannabis psychosis does not exist. Marihuana will not produce a psychosis *de novo* in a well-integrated, stable person." (4) And Murphy writes: "The prevalance of *major* mental disorder among cannabis users appears to be little, if any, higher than that in the general population." (86) Since it is well established that cannabis use attracts the mentally unstable, Murphy raises the interesting question of "whether the use of cannabis may not be protecting some individuals from a psychosis." Regardless of the issue of chronic psychosis, it is clear from Eastern descriptions that gross personality changes do result from very prolonged and excessive use of cannabis. The complete loss of ambition and the neglect of personal habits, dress, and hygiene resemble characteristics of the skid-row alcoholic in this country.

Cannabis and Crime

The association of crime with the use of cannabis goes back at least to around 1300 when Marco Polo described Hasan and his band of assas-

sins (see Walton or Taylor). The drug was reportedly used to fortify courage for committing assassinations and other violent crimes; the word assassin is derived from an Arabic word meaning hashish-eaters. In parts of this country, a near hysteria developed, around 1930, when the use of marihuana was claimed to be related to a violent crime wave and widespread corruption among school children. Dr. Gomila, who was Commissioner of Public Safety in New Orleans, wrote that some homes for boys were "full of children who had become habituated to the use of cannabis," and that "youngsters known as 'muggle-heads' fortified themselves with the narcotic and proceeded to shoot down police, bank clerks and casual bystanders." (53) Sixty percent of the crimes committed in New Orleans in 1936 were attributed to marihuana users.

Despite these lurid claims, subsequent studies have, for the most part, failed to substantiate a causal relationship between major crimes and cannabis. Bromberg conducted two large statistical studies and found very little relationship between crime and the use of marihuana. (23, 24) The Mayor's Committee found that many marihuana smokers were guilty of petty crimes, but there was no evidence that the practice was associated with major crimes. (79)

More recent assessments tend to agree with these findings. The Ad Hoc Panel on Drug Abuse at the 1962 White House Conference states, "Although marihuana has long held the reputation of inciting individuals to commit sexual offenses and other anti-social acts, evidence is inadequate to substantiate this." (121) Maurer and Vogel write:

> It would seem that, from the point of view of public health and safety, the effects of marihuana present a very minor problem compared with the abusive use of alcohol, and that the drug has received a disproportionate share of publicity as an inciter of violent crime. (77)

Chopra found the crime rate for the sample 1,200 regular cannabis users in India higher than that for the general population. (30) For bhang users, 6 percent had one conviction and 3 percent had more than one; for ganja and charas users, the comparable percentages were 12 and 17. In a further study of serious, violent crimes, however, especially murder cases, Chopra found that cannabis intoxication was responsible for only 1 or 2 percent of the cases. (29) In addition to impulsive acts performed under acute cannabis intoxication, there are frequent references in the literature to criminals using the drug to provide courage to commit violent acts. There has been no evidence offered to substantiate this claim; rather, Chopra writes as follows regarding premeditated crime:

> In some cases these drugs not only do not lead to it, but actually act as deterrents. We have already observed that one of the important actions of these drugs is to quiet and stupefy the individual so that there is no tendency to violence, as is not infrequently found in cases of alcoholic intoxication. (29)

Similarly, Murphy writes:

> Most serious observers agree that cannabis does not, *per se,* induce aggressive or criminal activities, and that the reduction of the work

drive leads to a negative correlation with criminality rather than a positive one. (86)

It is interesting that a number of observers, particularly in countries other than the United States, consider alcohol to be a worse offender than cannabis in causing crime. For instance, an editorial in the *South African Medical Journal* states:

> Dagga produces in the smoker drowsiness, euphoria and occasional psychotic episodes, but alcohol is guilty of even graver action. It is not certain to what extent dagga contributes to the commission of crime in this country. Alcohol does so in undeniable measure. (42)

In the United States, probably the most serious accusation made regarding marihuana smoking is that it often leads to the use of heroin. (77) The Mayor's Committee found no evidence of this, stating, "The instances are extremely rare where the habit of marihuana smoking is associated with addiction to these other narcotics." (79) Nevertheless, it is difficult to see how the association with criminal peddlers, who often also sell heroin, can fail to influence some marihuana users to become addicted to heroin.

Summary and Appraisal

Cannabis is an hallucinogen whose effects are somewhat similar to, though much milder than, peyote and LSD. The confirmed user takes it daily or more frequently, and through experience and careful regulation of the dose is able to consistently limit the effects to euphoria and other desired qualities. Unlike peyote, there are typically no claims of benefit other than the immediate effects. Mild tolerance and physical dependence may develop when the more potent preparations are used to excess; however, they are virtually non-existent for occasional or moderate regular users. There are apparently no deleterious physical effects resulting from moderate use, though excessive indulgence, noted in some Eastern countries, contributes to a variety of ailments. The most serious hazard is the precipitation of transient psychoses. Unstable individuals may experience a psychotic episode from even a small amount, and although they typically recover within a few days, some psychoses triggered by cannabis reactions may last for several months. In Eastern countries where cannabis is taken in large amounts, some authors feel that it is directly or indirectly responsible for a sizable portion of the intakes in psychiatric hospitals.

In this country cannabis is not used to excess by Eastern standards; however, it does attract a disproportionate number of poorly adjusted and non-productive young persons in the lower socio-economic strata. There is some evidence that its use among other groups is increasing, but is not readily observable because of the lack of police harassment and publicity. In Eastern countries cannabis use is currently also more prevalent in the lower classes; however, moderate use is not illegal, socially condemned, nor necessarily considered indicative of personality defects. The

reputation of cannabis for inciting major crimes is unwarranted and it probably has no more effect than alcohol in this respect.

Among those familiar with the use of marihuana in this country, there is general agreement that the legal penalties imposed for its use are much too severe. Laws controlling marihuana are similar or identical to those pertaining to the opiates, including the mandatory imposition of long prison sentences for certain offenses. Many judges have complained that these laws have resulted in excessive sentences (five to ten years) for relatively minor offenses with marihuana. The 1962 White House Conference made the following recommendation: "It is the opinion of the Panel that the hazards of marihuana *per se* have been exaggerated and that long criminal sentences imposed on an occasional user or possessor are in poor social perspective." (121)

The cultural attitude toward narcotics is, of course, a very important determiner of legal and social measures adopted for their control. An interesting commentary on the extent to which these attitudes resist change and influence factual interpretation is afforded by the lively debate that followed the publishing of the New York City Mayor's Committee Report on Marihuana in 1944. (43, 7, 18, 19, 20, 75, 120) This was an extensive study conducted under the auspices of the New York Academy of Medicine at the request of Mayor La Guardia. Its findings tended to minimize the seriousness of the marihuana problem in New York and set off a series of attacks from those with opposing viewpoints. An American Medical Association editorial commented: "Public officials will do well to disregard this unscientific, uncritical study, and continue to regard marihuana as a menace wherever it is purveyed." (43) And, as Taylor points out, "We have done so ever since." (115) Anslinger, the Commissioner of Narcotics, wrote, "The Bureau immediately detected the superficiality and hollowness of its [The Committee's] findings and denounced it." (8) The authors expressed dismay that the report was attacked on the grounds that the findings represented a public danger, rather than on its scientific aspects. (20) Walton, a leading authority on cannabis, wrote:

> The report in question came generally to the same conclusion that any other group of competent investigators might reach if they repeated the inquiry under the same conditions.... A scientific study should be expected to report merely what it finds, avoid propaganda and let the public do what it will with the results. (120)

Murphy raises the question of why cannabis is so regularly banned in countries where alcohol is permitted. (86) He feels that one of the reasons is the positive value placed on action, and the hostility toward passivity:

> In Anglo-Saxon cultures inaction is looked down on and often feared, whereas over-activity, aided by alcohol or independent of alcohol, is considerably tolerated despite the social disturbance produced. It may be that we can ban cannabis simply because the people who use it, or would do so, carry little weight in social matters and are relatively easy to control; whereas the alcohol user often carries

plenty of weight in social matters and is difficult to control, as the United States prohibition era showed. It has yet to be shown, however, that the one is more socially or personally disruptive than the other.

IV. EXTRA-MEDICAL USE OF LSD

I shall only briefly review this area, since I am sure that most of you are familiar with the recent literature on the subject. The uncontrolled use of LSD has received wide publicity, but, with the exception of certain small groups, its incidence is undoubtedly still quite low. We recently obtained some data on this subject in connection with an experiment that I shall describe in the next section. Of 121 male graduate students who responded to an advertisement for paid, experimental subjects, four had had peyote (two once and two twice); one of them had also had LSD (once in an experiment and once unsupervised); three had had experience with marihuana, and two had taken morning-glory seeds. Of the remaining 117, 10 had tried marihuana and 2 morning-glory seeds.

There is a tendency among many medical authorities to consider all extra-medical use of the hallucinogens to be motivated by a desire for "kicks." Beset by pressure from conservative colleagues, the Food and Drug Administration, and public opinion, they conclude their articles with an oversimplified statement of the potential benefit which may derive from the proper use for experimental investigation and treatment, while condemning the dangerous illicit abuse for "kicks and cults." Thus, the reader is handed a neatly packaged assessment that in no way conflicts with his personal or cultural preconceptions of the good and bad roles of drugs. In actual fact, those who currently wish to use LSD and other strong hallucinogens are largely motivated by the hope of beneficial, lasting effects rather than merely the immediate experience. Sanford writes:

> Those who advocate the drug's [LSD] use are not, in the main, after kicks, nor are they interested in antisocial activity. These advocates, who include intellectuals, professionals, and scientists, claim that the drug offers great benefits to the individual—rich inner experience, freedom to be himself, a chance for further development of his personality, and a loving rather than a hostile or indifferent attitude toward other people. (95)

To a considerable extent, this is the manner in which American Indians view peyote.

As discussed in the previous section, the stronger hallucinogens are not well suited for the production of dependable and repeated euphoriant experiences, as is the case with cannabis. A few persons will use them in this manner, but the rapid onset of physical tolerance, difficulty of control, tendency to produce psychological satiation, and the fact that peyote and mescaline have not proved popular in this respect with either Indians or whites all attest that there is little likelihood of their use in this manner.

Turning now to the hazards accompanying the use of LSD, there

have been a number of strong warnings from physicians. (37, 47, 56, 57) Most have been limited to its use outside of medical supervision, but Grinker writes, "The drugs are indeed dangerous, even under the best of precautions and conditions." (56) More recently Levine and Ludwig (69) along with Cohen (35), have argued in favor of their safety, when administered under proper medical supervision.

Although there are no statistics available, it seems probable that the incidence of psychotic reactions from LSD taken without medical supervision is considerably higher than that reported by Cohen for a sample of 5,000 subjects. Lack of screening of subjects, uncontrolled dose level, improper care during the intoxication, and lack of facilities for terminating severe reactions all will tend to result in a higher rate of complications. In particular, mild paranoid reactions, which are rather common, rarely pose a serious problem if handled properly, but when LSD is taken alone, or with an untrained person, such reactions can balloon, and become quite acute, sometimes lasting for several days or weeks. The history of peyote use by the Indians would seem to indicate, however, that there is no general deterioration or psychosis in store for those who use LSD repeatedly over long periods of time as has been suggested by some authors. (47, 57) As in the case of cannabis, psychotic reactions to LSD are virtually all transient in nature, although a few recover slowly over a period of months. There is no compulsion to continue taking LSD; a person experiencing a severe anxiety reaction usually has no desire to take it again. La Barre mentions that he has known several Indians who stopped taking peyote after such a reaction, (64) and the author has known persons who abruptly terminated their self-experimentation with LSD for the same reason.

There have been no cases reported of LSD addiction in the usual sense, but a peculiar type of "addiction" seems to have developed—its principal characteristic is a severe state of over-enthusiasm. Barron, Jarvik and Bunnel write, "There is a tendency for those who ingest hallucinogens habitually to make the drug experience the center of all their activities." (11) Grinker writes that one of the motivations is "belonging to a 'superior' social group which transcends the mundane existence of ordinary people." (56) The 1962 White House Conference reports that abuse of LSD and similar drugs is primarily limited to the "growth of 'long-hair' and beatnik cults which experiment with the use of psychotropic drugs to achieve group cohesiveness and personal nirvana" (121) —goals that incidentally are not considered particularly reprehensible under other circumstances. Cole and Katz express concern that "investigators who have embarked on serious scientific work in this area have not been immune to the deleterious and seductive effects of these agents." (37) Cohen notes that there has been "an impressive morbidity [among therapists] in view of the relatively small number of American practitioners using the hallucinogens." (34) Grinker waxes a bit over-enthusiastic himself with this statement: "At one time it was impossible to find an investigator willing to work with LSD 25 who was not himself an 'addict'." (56)

It is hardly surprising that the intense effects of the LSD experi-

ence produce such over-enthusiasm in some individuals; the reported mystical, transcendental, self-insightful experiences have proved impressive to a number of sophisticated persons, and are not likely to be dismissed lightly by those more suggestible. Fortunately, "over-enthusiasm," from whatever source, tends to be transitory in nature, and most of those so affected can expect to recover with no more treatment than the passage of time. Shelton (g8) has noted that Ching Yuan aptly describes a similar state:

> When I knew nothing of Zen, mountains were to me just mountains and waters just waters, but when I knew a little of Zen, mountains were no longer mountains, waters no longer waters; but when I had thoroughly understood, once again, mountains were mountains and waters were waters.

Some persons have raised questions about how to assess personality and value changes related to LSD use. For instance, Cole and Katz ask:

> How should one evaluate the outcome if an individual were, for example, to divorce his wife and take a job which paid him less but which he stated he enjoyed more than the one which he had previously held? If a person were to become more relaxed and happy-go-lucky, more sensitive to poetry or music, but less concerned with success or competition, is this good? There are suggestions that individuals who take drugs like LSD, either illicitly or as therapy, may become more detached from reality or less concerned with the real world, more "transcendental." (37)

Still others have viewed the hallucinogens as a threat to the Western value system. McClelland has been quoted regarding the Harvard experience with psilocybin:

> It is probably no accident that the society which most consistently encouraged the use of these substances, India, produced one of the sickest social orders ever created by mankind, in which thinking men spent their time lost in the Buddha position, under the influence of drugs, and exploring consciousness, while poverty, disease, social discrimination and superstition reached their highest and most organized form in all history. (55)

Mellen gives this impression after a peyote experience:

> What I found in peyote seemed squarely in contradiction with all the patterns of Western, industrial society: it did not fit in with the utilitarian context of my life and culture. It is worth wondering whether a society like ours could function if it were predicated on consciousness expansion. (82)

The questions raised by these writers are intriguing because they take the issue of drugs out of the usual context of individual problems related to excessive indulgence (primarily of alcohol) and suggest that they might threaten the social value system. The repeated use of the stronger hallucinogens might indeed have a profound impact on the social values of an isolated group. The ritual use of peyote undoubtedly plays

an important role among the Plains Indians, and this came about in a relatively short period of time. It is well to remember, however, the crucial role of the environment in determining the effect of hallucinogens. It is one thing to have such an experience and continue to live in the environment of the American Indian; it is quite another to come back abruptly to a competitive Western culture.

The controversy over the para-medical roles of LSD and similar drugs promises to grow more intense because of the complex evaluation of benefits vs. hazards. There also appears to be a re-evaluation of the hazards of marihuana, and a recognition that the associated legal penalties are far too severe. In one sense the prohibition of marihuana, and not the stronger hallucinogens, is analogous to banning beer but not distilled liquor. However, arguments in favor of LSD include those of religion, values, and freedom to improve one's personality, issues which are considered very important in our culture. Proponents for legalizing marihuana are mostly limited to the position that it provides escape and recreation and is probably less harmful than alcohol.

On the other hand, Huxley has repeatedly argued that a more rational policy would not simply accept the admittedly very unsatisfactory alcohol as inevitable, but would seek to replace it with better drugs:

> The need for frequent chemical vacations from intolerable selfhood and repulsive surroundings will undoubtedly remain. What is needed is a new drug which will relieve and console our suffering species without doing more harm in the long run than it does good in the short. (60)

The search for other chemical escapes does go on, but considering that we have abandoned the investigation to juveniles and beatniks, it is not surprising that we get nothing better than glue, nutmeg, and morning-glory seeds.

V. LSD-INDUCED PERSONALITY CHANGE: AN EXPERIMENTAL APPROACH

In a summary statement at the end of the first conference on "The Use of LSD in Psychotherapy," Savage said, "It seems clear, first of all, that where there is no therapeutic intent, there is no therapeutic result." (2) Dr. Savage was referring to the dramatic differences in effects (measured in part by the expressed willingness of subjects to repeat the LSD experience), depending on the environment and on the intent of the investigator. In a broader context, however, this statement raises some interesting questions. What constitutes "therapeutic intent," and on whose part? I think we all are agreed that extra-drug variables play a very large part, but exactly what are the necessary and sufficient conditions for LSD-induced therapeutic change? A number of investigations have reported impressive results with alcoholics, as well as a wide range of other patients, using a single large dose of LSD and very little other psychotherapy. (33, 73, 85, 99) Several experimenters have also remarked

that their (non-therapy) subjects have frequently claimed better adjustment, lower anxiety, increased feelings of well-being and confidence, and lasting insights. (1, 93, 96) Some of these have administered follow-up questionnaires at post-LSD periods of up to three years, and found that about 40 to 60 percent of the subjects claimed various personality, attitudinal and value changes attributable to the LSD experience. (39, 68, 113) An increasing number of people, including intellectuals and professionals, are convinced that they can derive various benefits from these drugs outside a formal therapeutic environment. (15)

I am certainly not arguing that the role of a skilled psychotherapist in LSD treatment is superfluous. Rather, I am posing the question of whether the subjective claims of benefit made by non-therapy LSD subjects can be confirmed in a controlled, quantitative experiment. To this end, we are currently conducting an experiment in which a large battery of psychological tests is given prior to the administration of LSD and at post-drug intervals of two weeks and six months. * The significance of this research is twofold. First, it should help determine the extent to which benefits derived by experimental subjects or extra-medical participants are independent of the motivations, expectations and suggestibility of the select group who volunteer to take LSD under these conditions. Second, it may be useful in providing a sort of base-line evaluation of LSD psychotherapy under controlled experimental conditions. Of course, negative results would not refute the usefulness of LSD in psychotherapy, but positive results would provide quantitative evidence under experimental conditions that are very difficult to reproduce in actual psychotherapy.

As mentioned in the previous section, the subjects for our experiment are male graduate students who responded to an advertisement for paid experimental subjects. They have no prior knowledge that LSD is involved, nor indeed, that it is a drug experiment. They are interviewed and given the "Minnesota Multiphasic Inventory" for screening, the "Myers-Briggs Type Indicator," and Aas' "Experience Inventory" tests** for matching experimental and control groups. The subject's previous experience with various drugs, including the hallucinogens, is determined in the interview, and he is then informed that the experiment involves the use of drugs and that he may or may not receive LSD. He is questioned concerning his knowledge of the hallucinogens and his reactions and expectations to the prospect of possibly receiving LSD. Seventeen percent of the subjects had never heard of LSD; twelve percent had read fairly widely on the subject. The remainder had only casual knowledge acquired from magazine articles or TV. Sixteen of the 121 subjects withdrew from the experiment because of concern about the dangers of LSD. Most of these did not withdraw immediately, but did so after being advised not to

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** These tests measure extroversion-introversion, and susceptibility to hypnosis, respectively.

participate by physicians, parents or other persons whom they consulted. Twelve of the remaining group were rated as somewhat fearful but did not withdraw. Only twelve expressed strong enthusiasm over the possibility of taking LSD in the sense that they hoped to acquire personal insight, or gain some other lasting benefit from the experience. The remainder were simply curious as to what the effects would be, and had no expectations of lasting effects, either beneficial or detrimental.

Twenty-seven of the 121 subjects were disqualified by the experimenters on the basis of having had previous experience with peyote or LSD; being presently in psychotherapy; the presence of psychosis in the immediate family; doubtful MMPI profiles, or interview impressions. The subjects then were assigned to one of three matched groups of 24 each. The experimental group receives three LSD sessions (200 mcg) at one-month intervals, the first session in groups of two, the second and third in groups of four. The two control groups are treated identically with the exception of the drug administered; one receives 25 mcg LSD and the other 20 mg amphetamine (5 mg immediate and 15 mg sustained release). There is no mixing of treatment groups within sessions.

During the week prior to the first session, two subjects have a one-hour interview with the clinical psychologist, who sits with them during the session. Attempts are made to establish rapport, allay anxiety and gain their confidence. They are familiarized with the procedures for the session and assured that no tests, demands or surprises will occur. Considerable effort is expended toward conveying the desirability of "going with" the drug experience, but no mention is made of long-term effect, except to answer questions concerning its safety. The experiment is double blind during the interview, and up to the point in the session where there are sufficient symptoms to identify the drug given.

The session is conducted in a large, beautifully decorated room specifically designed to enhance the drug experience. Music is played during most of the session. The sitter is supportive when required, but otherwise does not initiate interaction with the subjects.

The initial test battery is given during the week preceding the first session. The second and third batteries are identical (except that the majority of the tests are alternate forms) and are administered two weeks and six months after the third drug session respectively. The tests may be classified in five categories: anxiety, projective, attitude and value, creativity, and aesthetic sensitivity or preference. The anxiety tests include three from Cattell's "Objective-Analytic Anxiety Battery," the "Marlowe-Crowne Social Desirability Scale" (defensiveness), and the galvanic skin response to four psychological stressors. The projective tests are the "Holtzman Inkblot," "Thematic Apperception," "Draw-a-Person" and "Rosenzweig Picture Frustration." The attitude and value tests are an authoritarianism-dogmatism scale, an aphorisms card-sort, designed to tap various value changes frequently attributed to LSD, a sematic differential test using bi-polar trait-ratings of self and ideal self, and the Morris "Ways to Live" test. The creativity group consists of five tests intended to measure fluency, flexibility and originality. Finally, the "Graves

Design Judgment" test and "Bulley Art Scale" are intended to measure aesthetic aptitude and sensitivity, while the "Barron-Welsh Art Scale" and a painting card-sort assess aesthetic preference. *

In addition to measuring the change in test scores for the three groups, we hope to learn more about how the changes, if any, are related to initial personality measures and to the type of LSD experience, as described by the sitter, and to the subject check-lists and subjective reports (completed the day following the session).

DISCUSSION

Dr. Savage: What kind of a population did you have in your studies?

Dr. McGlothin: Our subjects did not know that it was a drug experiment, let alone that it was LSD. We are quite certain that this is true. We had a population that needed money; they volunteered for the ninety dollars. There may be special groups who volunteer for experiments, that's true, but we did not sample the group of people who volunteer for *drug* experiments.

Dr. Fremont-Smith: These are graduate students?

Dr. McGlothlin: These are male graduate students.

Dr. Fremont-Smith: And you made an announcement so that they would know that there was this opportunity?

Dr. McGlothlin: We advertised in the daily paper.

Dr. Mogar: I wonder if Dr. McGlothlin would comment on the actual conduct of the sessions, particularly the relationships or interactions between the subject and the experimenter.

Dr. McGlothlin: We attempt from the standpoint of our experimental design to keep interaction to a minimum; that is, we do not encourage interaction between the experimenter and the subject. The first session is given to groups of two; the second and third sessions to groups of four. The experimenter is in the background. The subjects lie on couches in the main part of the room, and we have found thus far, particularly in the 200 mcg group, that most of the subjects simply put on a sleep shade when they come in and lie down on a couch and listen to music, and very often nobody moves for the first four hours. They lie very quietly. If someone is disturbed—we've had a couple of occasions in which people have been disturbed—the sitter does offer support; but this is a rare instance, and for the most part, particularly in the more intense part of the session, there are no interactions between the subject and the sitter.

* We have conducted a pilot study on 15 subjects using several of these tests. (80) The subjects were volunteers for an LSD experiment and the retesting occurred one week following a single 200 mcg session. Significant drops in anxiety measures and certain attitude changes resulted, but no change was observed in performance tests.

Dr. Baker: Were they assigned at random?

Dr. McGlothlin: They were matched into three equal groups. They were matched on a number of variables.

Dr. Fremont-Smith: Did all who were in the group at the same time either have the drug or not?

Dr. McGlothlin: Right. There was no mixing of treatment within the session itself.

Dr. Fremont-Smith: They either had a placebo, or another drug, or they had LSD.

Dr. McGlothlin: Right.

Dr. Osmond: When you're referring to the subject as a group, technically speaking you made no attempt to produce a group. That is, there were four people lying down, and you were not emphasizing in this, I think, very interesting study, social interaction. You were emphasizing individual experience. Is that correct?

Dr. McGlothlin: Yes, we used group sessions mainly for economic reasons. We're running seventy-two subjects three sessions each, which would be 216 sessions if we ran them individually.

Dr. Osmond: And in a way it is not correct to say that these are groups in the ordinary sense—

Dr. McGlothlin: Right, correct.

Dr. Osmond: These aggregates are aimed in this particular direction, and doubtless at some later date you will elaborate the sociological stratum of this, but what you're doing is giving us a sort of baseline here.

Dr. *McGlothlin:* Yes.

Dr. Fremont-Smith: In other words, you didn't have a group that knew each other as a social group and then went into the experience, but they came in isolated and they might have become socially interrelated in the course of this, perhaps.

Dr. McGlothlin: That is correct. During the week prior to the first session, the two subjects receive an interview, at which time we tell them about the session, how we conduct it, and try to get across this notion of going with the effects. We do interview them together, and they have that opportunity to meet each other, and also to get to know the sitter.

Dr. *Levine:* Dr. McGlothlin, have you noticed any difference between the first session and the second and the third sessions? We know there is great variability in response. I wonder, in addition, whether, having had a first session, then, in effect, this changes what you see in the second and third sessions?

Dr. McGlothlin: That is our reason for running three sessions in this group. We thought that these people are not motivated. In fact, a number of them were motivated to leave the experiment when they found out it was LSD; some sixteen out of our initial sample of 121 withdrew for fear of taking LSD. While we don't plant any motivation in them, it is my feeling that they would pick up some in the process of taking three sessions at six-week intervals. They would learn something

about it, and so forth. So far, of the twelve high-dose subjects run, only six have had a second session, and none a third session. We haven't noticed too much difference. One subject, who was quite resistant, and didn't go with the experience at all on the first occasion, did have a quite strong religious experience the second time around. The other five had pretty much the same type of experience. But I think it's too early to say whether the second and third sessions will be generally more intense than the initial one. When the subject comes in for his initial interview, we question him about his attitude toward participating in an experiment in which he may receive LSD. The most common response is one of curiosity about the kind of hallucinations he may experience. Only eleven, out of our sample of 121, indicated they hoped they might obtain some lasting benefit from the experience. There was a considerably larger number who evidenced concern about it.

Dr. Fremont-Smith: The question has been raised that you haven't commented on anything that appears in the early part of your paper.

Dr. McGlothlin: Well, I didn't say anything about the first part of the paper in general, which deals with what we might learn about the socio-paramedical aspects of hallucinogens from the older drugs, peyote and cannabis. It's simply a review article, and I almost didn't get through the experiment—I thought there would be more interest in the experiment that we are conducting, perhaps. But, if there are questions about this, I—

Dr. Pahnke: Dr. McGlothlin, I wonder if you'd say something about what kind of data you're getting on the people in the two control groups. First of all, the twenty-five mcg LSD group and, second, the amphetamine group.

Dr. McGlothlin: Well, as I say, we don't have any retest data. I can just talk about the type of sessions that we're getting. They are very mild, I'd say. If I had to do it over again, I think I'd step up to thirty-five or fifty mcg in the one control group. We had hoped that our twenty-five mcg group would think they had received LSD—of course it would be a very low level reaction. But, in fact, only two of our people who have gotten the low dose of twenty-five mcg LSD have reported that they received LSD. Occasionally, a person will go pretty well, will lie down and report some visual or auditory effect from twenty-five mcg, but a good share of them report very little in the way of a reaction to twenty-five mcg.

Dr. Pahnke: How about the amphetamine group?

Dr. Fremont-Smith: Dr. Pahnke, will you ask your question not to the speaker, but to us all? The first question you asked—nobody heard what was said. Those who did hear couldn't understand, so ask your question to the group so that we can all get it. Now, ask your question again, please.

Dr. Pahnke: I asked about the—he already answered the first part about what the control group's experience was with the twenty-five mcg LSD. The second part of the question is: what about the second con-

trol group, who got amphetamine? What kind of experiences did they have?

Dr. McGlothlin: The amphetamine group—well, first of all, it is a double blind experiment, so far as it can be. We, the sitters, do not know what drug is being given, and, while we generally didn't have much difficulty detecting the 200 mcg group, we haven't been at all confident that we can distinguish between the amphetamine and the twenty-five mcg. It turns out that under these conditions, where they put on a sleep shade and listen to music, the amphetamine group did not get up and keep active, at least for the first few hours. They frequently react pretty much the same as the twenty-five mcg group. We have had no hyperactivity of any of our subjects, and in reporting on twenty of the control group, I as yet don't know specifically which ones got amphetamine and which ones got twenty-five mcg. They're not very different, though. I know that.

Dr. Dahlberg: One question about technique: these people were not certain that they were going to get LSD. Is that true? They knew that it was a possibility.

Dr. McGlothlin: Yes, that's right. Well, they were, of course, graduate students, and they probe you at length—if they don't receive LSD the first time, may they the second and so forth, but we established one standard answer to this, and that was: you may or may not receive LSD.

Dr. Ketchum: I have two questions. My first is: were the volunteers screened for psychiatric suitability, and were they rejected on this basis? Secondly, it has been reported by Dr. Cohen, and others, I believe, in some of their studies, that reducing sensory input during the LSD experience considerably reduces the intensity of the experience, and I wondered whether the use of eyeshades might have had such an effect—whether you observed any differences between those who wore eyeshades and those who did not.

Dr. McGlothlin: In answer to the first, yes, we did screen. We used the MMPI and an interview. We screened, out of the initial 121, some twenty-seven of the subjects. We eliminated those with doubtful MMPI profiles, and those who had had a history of psychosis in the family. Also because of our experimental design, we screened out the four people who had had previous experience with hallucinogens.

In answer to the second question: I know it's Dr. Cohen's experience that a sensory-deprived environment sometimes cuts down on the experience. But we felt that when we played music, sometimes eyeshades were quite beneficial. I think a number of other people have, also—in terms of getting into the experience. They don't have to wear eyeshades; we suggest that some people find it helpful to put them on and many of them do. But, no, I don't think that that would reduce the experience. I think it would help these subjects get into it.

Cohen: In order to clarify that last remark, it was our finding indeed, that unsophisticated subjects given LSD in a sensory-deprived en-

vironment might have no LSD reactions, but we also found just as large a group, namely 50 percent, who had intensified LSD reactions under the same conditions.

Dr. Pahnke: I would like to ask about the people who you say were left alone for four hours, without any interaction. What was the recall like, about the experience without being interrupted? Did that in any sense make it a blank or amnesia for the people?

Dr. McGlothlin: We have our subjects write subjective reports the day following, and there is no indication that this is the case.

Dr. Abramson: Do you recall the experiment of Hoch and his group at the New York State Psychiatric Institute where he gave several hundred people LSD? None of them had a pleasant experience. None of them wanted to take it again. I wondered if you would discuss his results, which are very opposite to mine, in connection with yours. It was very difficult for me to persuade people not to take it again.

Dr. McGlothlin: I don't know if I'm familiar with that particular experiment; I think probably I've read it. I know that some early experimenters who gave it in a psychotomimetic setting, with testing and poor surroundings, did get a high percentage of unpleasant experiences. And as was pointed out, most of them [the subjects] did not want to take LSD again. We are certainly aware of the importance of the surroundings and preparation, and our subjects get it under reasonably good conditions. We spend an hour with them prior to the session day, attempting to allay any anxiety about the experience, and we administer it under, I think, very good conditions. We have gone to a lot of effort to design a very beautiful room. It is decorated very nicely. We make absolutely no demands on the subjects. We tell them beforehand that they are completely protected; they can do anything they wish. During the experience nobody will be coming in on them, they have no tests to take, no demands will be made on them. It is their day; they can lie down and listen to music, they can talk with each other or the experimenter if they wish, but they don't need to. Under these conditions we have had three subjects who had somewhat unpleasant experiences—three out of the twelve. Two of these wanted to continue, as I indicated, but their wives wouldn't have any part of it. Actually all three of them scheduled their second drug session and wanted to continue, but in two cases, their wives persuaded them not to. One of them, for reasons unknown to me, backed out at the last minute.

I don't think I have any more on the experiment. We don't have, as I say, very much to report at this time. We will be doing our follow-up testing and completing of this experiment about sixteen to eighteen months from now. I know I neglected to discuss the major part of this paper, which dealt with a review of the use of peyote and cannabis. I would like to re-emphasize my feeling about that. There is a fair amount of LSD and other hallucinogens being taken under unsupervised conditions, in this country at least, and there is every indication that this use will accelerate rather than drop off. There is

a lot of speculation about what the various adverse social and medical effects are that might result from this. Often the attitude is, well, we don't know very much about taking these drugs frequently and over a long time span under unsupervised conditions. I think we know quite a bit; I mean, we can supplement a limited knowledge on the social use of LSD simply by looking at some of these older drugs, such as peyote and cannabis; there is quite a bit to be learned. The other point is that I think the attitude many of us take about misuse is to some extent erroneous, however ill-advised we consider such activity. Most of the people who are taking LSD in this country under unsupervised conditions are not the people who are simply interested in kicks—the usual motivation of drug users who are interested in any kind of a drug that will change their psychic conditions. Most of these people, as I say, however ill-advised you may feel that it is, are nevertheless genuinely interested in taking it because they think it will in some way benefit them in a lasting way. I think it well to understand that many people dismiss the whole issue as related to a group of people who are just interested in kicks and cults. And I think that is not quite correct.

II

PSYCHOPHARMACOLOGY

Dolphin-Human Relation and LSD 25

John C. Lilly, M.D. *

We are exploring the dolphins with LSD 25 in several areas. We started out with a physiological hypothesis: anything which would modify central nervous system activity as radically as LSD 25 does, might interfere with respiration in the dolphin. The dolphin might stop breathing. We were then prepared to put it in a respirator. The effect was the opposite of the barbiturates (barbiturates at 10 mg per kilogram knocked out respiration completely). The effect on the first dolphin we tried it on was an acceleration of respiration.

Dr. Fremont-Smith: With LSD?

Dr. Lilly: Yes, with LSD 25, 100 mcg dose in a 400-pound animal. There was about a 50 percent increase in the respiration rate at the beginning and then a four-times increase in the rate at the peak of the effect. At the same time the heart rate went up 20 percent. We recorded the events on a tape recorder. I reported (before the controls were run) to Dr. Cohen that we had found a specific acceleration of respiration with LSD 25.

Our first animal was out of water, he was stranded. This is something which causes dolphins a great deal of distress. In other words, they are in a continuous state of anxiety when they are out of water. At the same time there was a low level of pain in this particular one. We found out later that there were pressure point lesions which they get when they are taken out of water.

Along the way, however, we were recording vocalizations and found that during the LSD experience he regularized his vocal output at a steady 10 to 30 percent duty cycle; the controls oscillated widely between zero and 70 percent. We followed this very carefully and finally derived a measure of vocal activity which might be useful in psychiatric studies.

One takes the fraction of the time we spend talking or vocalizing per minute. Plot these during the LSD experience and run controls before and after, and with a placebo. One finds that the effect of the LSD is to raise the vocal index (duty cycle) to a level of 10 to 30 percent steadily with anxiety present. Without anxiety and without stimulation, the duty cycle

* Director, Communication Research Institute, Miami.

is zero. Very frequently under LSD with stimulation it does not drop to zero at all. There is a sustained level, and each stimulus increases the vocalization activity and keeps it going in a very prolonged "after discharge." In other words, one stimulus will raise the vocal index for about five minutes. Without LSD it will only raise it for about fifteen seconds.

We ran careful controls, changing the second setting, putting an animal in a small tank with another animal; putting it in a small tank with shallow water alone; putting it in a very large tank where it had complete freedom of swimming. As we began to free it up and get it more toward its natural conditions of free swimming in deep water, the vocalization index dropped closer and closer to zero and then stayed there. We obtained a very brief enhancement vocalization twenty minutes after the initial dose of 100 mcg. When the dose was increased to 300 mcg, there was a more sustained effect, over and above the results with placebos; this effect lasted about an hour at a very low level near zero.

If a person enters the tank, the vocalization index goes up and stays up with LSD. It rises only briefly without LSD. If you put a second dolphin in with the first (with the LSD) the vocalization index rises and stays up right around 70 percent for the full three hours. In other words, an appropriate exchange now begins to take place. The other animal, by the way, is answering him and his vocalization index also is up.

If you now put in a placebo, the performance is very much lower, it is only around 10 percent as opposed to 70 percent. We find, then, that we have here a behavioral measure, if you wish, of a very sensitive process. We find that the effective quantitative range over which this particular behavioral variable runs is about four log units.

There are some difficulties with it. You have to take running averages through your data; this is most easily done with a computer program. In regard to the second setting, once again I will bring up the term "fear." I think it is very appropriate in these kinds of situations. A dolphin out of water is in a fear-evoking and anxiety-producing situation. If you now give him "tender loving care" during this state, one can reduce these measures down toward a normal value.

We have several dedicated women at our laboratory who give "tender loving care" to the dolphins under all sorts of conditions. I have rather an ideal "mother" over at St. Thomas who is quite willing to live with them and to give them very close attention. She has spent several months working with what we now think is rather an unusual case.

We have one dolphin that we received two and a half years ago. In this particular instance this dolphin had been shot with a spear gun three times through the tail. We knew this dolphin before; we had helped the owners get a very close relationship with this same dolphin; we knew her behavior before the trauma happened. After it had happened she would not come near human beings at all.

In our pool she would stay on the far side away from anybody that was there. If you tried to approach her, she would shoot away from you. She acted like this for two years. We decided to use her as one of our controls, using LSD 25.

As the LSD effect came on, forty minutes after the injection of 100 mcg, the dolphin came over to me. She had not approached me before. She stayed still in the tank with one eye out of water looking me in the eye for ten minutes without moving. This was a completely new behavior. I moved around to see if there would be any effect from my movements. She followed me right around the edge of the tank. I moved out of the room, and the assistant moved into position. The same behavior continued. It is a very amazing change in behavior. She will now come within five feet of me instead of staying twenty feet away.

Dr. Fremont-Smith: She had only one treatment?

Dr. Lilly: Yes, one. I want to emphasize the roots of psychotherapy. One of the roots is verbal, with meaningful sounds being made and a verbal exchange taking place between the therapist and the patient. The next one is merely vocal. Each makes noises that have no verbal meaning but have meaning on another level. The third one is physical contact. We do not use the verbal level. We do use the vocal level. There is sort of a "nonsense" exchange taking place a good deal of the time when you are with a dolphin. We do use the physical contact. Here is where we do exchange on the non-verbal and non-vocal level. We have developed a "silent" language, half of which the dolphins have taught us. They will tell us when they don't want us in the pool, they will tell us when they do want us to come in. They do this by gestures, by nudging, stroking and all sorts of this kind of non-verbal, non-vocal language. It is a very primitive level, but it is absolutely necessary in order to make any progress on the other levels. One dolphin, called Elvar, was not functioning on any level until we were willing to go into the water with him, and meet him in his element, and get very close to him in a physical sense. There are only a few people, we find, who can do this. Fear of the huge size of these animals, the threat of being in the water with them, the possibility of being drowned, or badly hurt, overcomes their intellectual awareness of the maxim—"No dolphin has ever hurt anybody badly." This is a very primitive fear that develops in humans. I have had it myself, and every so often it comes up again if an animal really threatens by either charging or biting. They will take an occasional nip at you, or they may bark. We have learned to leave the pool when these things happen. Fifteen minutes later the picture may be completely changed.

The important thing for us with the LSD in the dolphin is that what we see has no meaning in the verbal sphere. The meaning resides completely in this non-verbal exchange. This is where our progress has been made in the last three or four years—in developing this other level, because we were forced to. We have had to do it in order to make any Progress on the vocalization and communication. In other words, we accept communication on any level where we can reach it. We are out of what you might call the rational exchange of complex ideas because we haven't developed communication in that particular way as yet. We hope to eventually. We do it on a level of a mother-child relationship and we find that this particularly motherly type of woman makes the fastest Progress. I don't have the patience to do what they will do. For example,

that girl in St. Thomas spent a full week, twenty-four hours a day, with the dolphin, in sixteen inches of water. She cooked and slept in that area, wet. She has learned now how to live wet. She has learned the proper kind of clothing to wear; she has learned that she can't have any electrical appliances, so we have given her a propane stove for cooking, and so forth. We are modifying two rooms at the laboratory, one on a balcony out in the sun, and one inside. We have taken the tank out and are making the two rooms into a tank with two feet of water in it. The girl has areas where she can climb out of the water, and the dolphin has areas where she can get into deeper water. The human-dolphin relationship seems to develop best in eighteen to twenty-four inches of water. In other words, the dolphin can still swim, and the person can still walk or sit down or lie down, without fear of drowning, so that we can meet the dolphins about half way. The response of these animals is excellent when one does this. They apparently are quite willing and able to live under these conditions. In two cases dolphins that started when they were young enough substituted human company for dolphin company. They now prefer the humans.

Dr. Fremont-Smith: It was extraordinarily appropriate to this Conference—your telling us about the dolphin that had been injured and therefore avoided humans, and had been brought back into this intimate contact, under LSD, with a loving motherly creature. This seems to me to fit so closely with what we have been learning about the needs of human beings who are being treated with LSD. I am delighted with it. I missed calling on Dr. Kramer before, and in view of the fact that he is trained as a pathologist and seems to be quite a psychotherapist also, by accident or design—I don't know which—I wish he would make a comment at this point.

Dr. *Kramer:* I think you took the words out of my mouth, because these two occasions are the first opportunities I've had to listen to Dr. Lilly talk about dolphins. I was singularly impressed on both occasions with one quality and that is the caution with which he approaches his animals. I think that is a quality that is appropriate to learning anything about a new phenomenon, and I think it is particularly appropriate to working with patients in a therapeutic relationship, or to the use of LSD in a therapeutic relationship. I know that we ethologists have often been criticized for not being sufficiently objective in many of our observations. One of the things we try to do before we begin any objective experimental procedures is this: we really try to get to know the animal, and to form some sort of bond, some sort of relationship with the animal that will make it possible to perform objective experiments or experimental studies without violating the sense and meaning of the animal.

I remember that Konrad Lorenz once talked about the nature of the bond that forms between geese. Instead of talking about the love between a pair of geese, he simply spoke about the bond and formation. Somebody asked him how he would define that quality of love, or bond and formation, and he replied, "Well, I would say that the relationship or interpersonal valence," as he put it, "is the same as the home valence of the animal in its territory." In other words, that animal feels with a bonded animal exactly as if it is at home, and perhaps this is the point that we

have been getting at in talking about setting. Unless the animal feels absolutely at home, then much of this material fails to emerge. So I want to say again how impressed I am with the approach that Dr. Lilly has taken to his animals, a group of animals about which very few people ever knew anything. And I don't think he would have learned anything unless he had taken this particular approach to these dolphins.

Dr. Fremont-Smith: May I simply add that "at home," curiously enough, somehow seems to be related to mother. Most of us had our first home with our mothers, and most of us want to go home to mother, whether it's apple pie or not—that is when we are young and haven't built our own homes.

Dr. Lilly: All of these points are very well taken. We learned quite quickly when we began this research that if anybody working with a dolphin assumed that the dolphin was stupid, then the dolphin would act stupid. If you went at the dolphin the way you would at a rat, and tried to get him to perform, he'd perform very well for a very short period of time. If the criteria were too strict, and you put him down in too narrow a slot, so that you bored him, he would break the apparatus and throw it out of the tank. We have had several psychologists who came to the lab expecting to work with the dolphins the way they would with rats, and the dolphins won't put up with it. It is very dramatic when the system breaks down. We explain this to the psychologists, and say, "Get in the tank with them. Make friends with them, and maybe they will put up with it a little longer."

The humans won't do this. I suspect that, if they went into this analytically, they would find it is their own fear which dictates the way they try to work with the dolphins.

Another point is the basic beliefs with which one approaches this work. You come believing in their intelligence, and then listen to them, and let them tell you what the experiment is going to be; to a certain extent let them dictate the terms on their side and you get the performance.

Dr. Fremont-Smith: Isn't there a real analogy, you used the word "dictate," but isn't there a real analogy from what you just said to the way the best therapist relates herself or himself with the patient? He doesn't dictate. The patient plays a very important role in saying what's going to come next and what the style of the relationship is going to be. It seems to me you really described in slightly different words what is really implicit and explicit in our best psychotherapeutic situation.

Dr. Lilly: The day you frighten the patient is the day your therapy won't work.

Dr. Hertz: I wonder if you have observed any rhythmic activity? With patients I have observed what I interpret as alterings in rhythmic activity. I try to have the patient breathe at a certain rate; the time was estimated as too slow one moment and too fast the next; and so I am Wondering if you have experienced this?

Dr. Lilly: Yes, there are a multiplicity of rhythms in relationship which we have to watch very carefully, and one of the predominant ones which you find with dolphins, you can find it with humans too. If you

immerse the dolphins in water—that is that they can work fast for about ten to twenty minutes, and you can get a magnificent result. They then want to take a five minute "time-out," and you must give it to them. If you try to press them through that time, you will get only the response to an irritation. They go away from you, and just swim around and relax. Then they come back and are all ready to go again. This is their sleep time. They sleep five minutes out of, say, half an hour, all day long and all night long, with a slight peak during the night. You see the same thing with LSD. They slow down but they do not sleep.

Miss Wicks: I was quite fascinated by your talk about dolphins because it is so close to my own experiences working with delinquents and people who have been so damaged that they can't trust or relate to anybody. I know from experience in working with these people for years, who never give in, and who always hit back at society, and I have had the same experience you had. After one or two treatments with LSD they are feeling for the first time that they are actually relating, and that it is possible to get near someone, and that it is all part of the process of loving —and then be able to accept love.

Dr. Lilly: Then you must have the same feeling that we have for the animals.

Miss Wicks: Just the same, particularly under LSD, when they [the patients] act out aggressively. One does have it, I know I do. There is an underlying feeling that they may attack, but they never do. One sort of puts one's faith in—

Dr. Lilly: Actually dolphins never attack, but you have to believe this. It always looks as if the next day may be the first time. They are huge animals, and are very powerful.

I am very much indebted to the Conference for the opportunity to learn what other people are thinking along lines very similar to the ones we are pursuing. We are pursuing them in a somewhat different area, but I don't let that inhibit me, as you can see. I think it is important when working with such a large animal that we make use of everything that we can possibly learn about our own species. The respect and integrity that we detect in our own species, we at least temporarily must attribute to the animals, and treat them in that fashion. The question of whether you call them animals or not seems to disappear in the laboratory. You now include yourself as an "animal" and go on calling them "animals, or you drop that term completely and go on calling them by one name—a dolphin—this is a measure of the warmth which has developed. Anybody who is still calling them animals, in terms of cats and monkeys, we sort of disown.

Comparison of LSD with Methysergide and Psilocybin on Test Subjects

Harold A. Abramson, M.D. *

André Rolo, M.D. **

This paper is a continuation of our experiments with LSD 25 and similar compounds that have been carried out over the last thirteen years. (1) It employs the same technique described previously (2) to compare these drugs on non-psychotic test subjects under suitable conditions. The conditions of the experiment are most important because under certain circumstances the experimental milieu produces so much anxiety that the environment may be said to affect the results as much as the drug itself. Of particular importance is the growing use of methysergide (Sansert) in the treatment of migraine. The frequent occurrence of side effects due to Sansert and the apparent development of tolerance to this derivative of d-lysergic acid has led us to explore the effects of methysergide (Sansert) in the same test subjects used in the study of psychotomimetic drugs for the past ten years. The present series of experiments comparing LSD 25, psilocybin, psilocin and methysergide were begun in 1958. This communication will report on more than 150 experiments with these drugs.

The experiments were run either single-blind or double-blind. The subjects were informed that they would receive LSD, psilocybin, a placebo or a derivative or congener of LSD. In the experiments with methysergide they were told they would either receive LSD, methysergide or a placebo.

METHOD

A reliable method of comparing in man the effectiveness of the different psychotomimetic drugs has been described previously. Experiments on man are complicated by the recurrence of placebo positive reactions (4) in subjects thought to be placebo negative. The same

* Director of Research, South Oaks Psychiatric Hospital, Amityville, Long Island.

** Medical Director, South Oaks Psychiatric Hospital.

trained group of six essentially placebo negative subjects to whom LSD 25 and other psychotropic drugs were administered regularly were the test subjects under social test conditions.

The Cold Spring Harbor Questionnaire was employed to structure the experiments. It was composed originally at the beginning of the project and has been described in detail elsewhere. (2) The questions of the questionnaire were constructed so that a positive response independent of the intensity of the reaction constitutes one response. Soluble drugs were administered in two ounces of distilled water one half hour before the evening meal. Psilocybin was administered similarly. Methysergide was obtained by purchasing commercial tablets of Sansert. Because Sansert tablets do not dissolve readily, the tablets were ground in an agate mortar and placed in red capsules mixed with sugar so that the capsules always appeared filled. In this way the subject could not distinguish between capsules that contained methysergide and a placebo. The subjects were between 35 and 45 years of age.

EXPERIMENTAL

Because of the unreliability of much of the data presented in the literature, we are presenting our data in detail so that the care with which our experiments were constructed to avoid placebo reactions is demonstrated. In addition, our data will also demonstrate the development of cross-tolerance in this group of psychotomimetic drugs.

Subject I

Table 1 illustrates experiments on a female subject who accurately estimated her LSD reactions. At the beginning of the series she reported that up to 300 mg of BOL produced no symptoms. She also showed no response to 100 mcg of d-lysergic acid methyl propylamide. Having established her basic responses to LSD and having tested her as well with other related compounds and found her to be placebo negative, 6 mg of psilocybin were administered on three successive occasions one week apart. The psilocybin was administered blind and subject JG did not know whether she was getting LSD or psilocybin. In this series of experiments the subject estimated that 6 mg of psilocybin were approximately equal to 35 mcg of LSD 25. In Experiment 9, having established that the subject responded to 6 mg of psilocybin, MLD was administered for ten days prior to the experiment to ascertain if she would develop tolerance to 9 mg of psilocybin. The table indicates that there was only one response to the questionnaire with this dose and that the cross-tolerance to psilocybin was developed by MLD. This is of importance because MLD was administered safely to this subject as well as to other subjects in increasing doses at home. Tolerance to MLD developed rapidly and for this reason very high doses of MLD may be safely administered if a sub-threshold dose is increased gradually. Apparently tolerance to methysergide is also observed in those who take 1

for prolonged periods for treatment of migraine. (6, 7) Experiment 10 shows that the subject lost her tolerance to psilocybin and responded with classical symptomatology to 8 mg of psilocybin the following week. Three weeks later the subject was tested with 75 mcg of LSD, having had 67 mg of psilocybin, taken in increasing doses for nine days before. This experiment in JG correctly shows that cross-tolerance to LSD was developed by prior administration of psilocybin. Experiment 12, where 50 mcg of LSD was administered, again demonstrates that the cross-tolerance developed by psilocybin was lost. The subject correctly estimated 50 mcg of LSD. Experiments 13 to 26 report a continuation of our attempts to assay in this test subject the effect of doses of psilocybin from 4 to 8 mg and of psilocin from 2 to 6 mg. The subject estimated fairly accurately the dose of psilocybin or psilocin administered, and this dosage was confirmed by the numerical value of the positive questionnaire responses. It is of interest in Experiment 19 that 1 mg of d-lysergic acid ethyl propylamide produces cross-tolerance when administered for seven days in increasing doses, but that 7 mg of LAE (d-lysergic acid ethylamide) similarly administered produces little or no cross-tolerance. Experiments with subject JG were discontinued because of the data in Experiments 27 and 28. The subject became placebo positive apparently because of the personal problem mentioned in Experiment 12, and further data obtained from this subject were discarded. It is believed, however, that the data given in Table x are valid representations of this subject's reactions. It should be noted that with the method employed by the frequent use of placebos, the repetition of doses and the replicability of the data, valid results are obtained.

TABLE 1

(J. G., Female, Wt. 61 Kg.)

Key to abbreviations: N, number; LSD, d-lysergic acid diethyl amide; BOL, 2-bromo d-lysergic acid diethyl amide: LMP, d-lysergic acid methyl propyl amide; P, psilocybin; MLD, 1-methyl lysergic acid diethyl amide; LAE, d-lysergic acid ethyl amide; LEP d-lysergic acid ethyl propyl amide; LME, d-lysergic acid methyl ethyl amide; Pn, psilocin; Ss, subjects; est, estimate; mg, milligram; mcg, microgram.

Exp. No.	Date	Drug	Number of Positive Questionnaire Responses Hours 0.5	1.5	2.5	3.5	Total N	Remarks
1	11/21/58	50 mcg LSD	0	12	8	3	23	SS est 35-50 mcg LSD
2	12/5/58	100 mcg BOL	0	0	0	0	0	No reaction
3	12/12/58	200 mcg BOL	0	3	0	0	3	No reaction
4	12/19/58	300 mcg BOL	0	1	0	0	1	Sub-threshold
5	5/1/59	100 mcg LMP	0	0	0	0	0	No reaction

6	5/15/59	6 mg P	2	10	4	0	16	Ss est equivalent 50 mcg LSD
7	5/29/59	6 mg P	0	9	1	0	10	Ss est 25-35 mcg LSD
*8	6/5/59	6 mg P	0	7	21	0	9	Ss est 35 mcg LSD
9	7/3/59	9 mg P 4300 mcg MLD from 6/23 to 7/3/59	0	1	0	0	1	Ss est less than 25 mcg LSD. Cross-tolerance developed.
10	7/7/59	8 mg P	9	13	5	21	29	Ss est 9-10 mg P.
11	7/31/59	75 mcg LSD 67 mg P from 7/22 to 7/31/59	0	2	1	0	3	Ss est sub-threshold of either P or LSD. Cross tolerance developed.
12	8/14/59	50 mcg LSD	2	10	5	0	17	Ss est 50 mcg LSD. Subject upset because of personal problem.
13	8/24/59	8 mg P 555 mcg LSD from 8/17 to 8/24/59	0	1	1	0	2	Subject felt dreamy. No other symptoms. Cross-tolerance developed.
14	12/4/59	6 mg P	0	7	3	1	11	Ss est 25 mcg LSD
15	1/8/60	8 mg P	0	6	4	2	12	Ss est 8 mg P
16	1/22/60	8 mg P	0	9	4	1	14	Ss est 8 mg P
17	1/29/60	8 mg P 7000 mcg LAE from 1/22 to 1/29/60	0	6	2	0	8	Ss est 8 mg P
18	2/5/60	50 mcg LSD	0	6	6	2	14	Ss est 35 mcg LSD
19	2/12/60	8 mg P 1000 mcg LEP from 2/6 to 2/12/60	0	2	0	0	2	Ss cannot est dose of P or LSD but at threshold. Cross-tolerance developed.
20	2/19/60	4 mg P	0	6	2	0	8	Ss est 35-50 mcg LSD or 8 mg P
21	3/11/60	4 mg P	0	5	1	0	6	Ss est 4-8 mg P
22	3/25/60	4 mg P	0	5	2	0	7	Ss est 25-35 mcg LSD
23	4/1/60	2 mg Pn	0	2	0	0	2	Ss est 2-4 mg P
24	4/8/60	4 mg Pn	0	4	1	0	5	Ss est 4-6 mg P
25	4/15/60	6 mg Pn	0	5	2	1	8	Ss est 8 mg P
26	4/29/60	2 mg Pn	0	2	0	0	2	Ss est 2-3 mg P
27	5/6/60	Placebo	0	3	1	0	4	Ss est 3-4 mg P. Placebo positive.
28	5/13/60	Placebo	0	1	0	0	1	Ss threshold dose of P

Since subject became Placebo positive, subsequent data have been discarded.

Subject II

CG, a male scientist weighing 80 kilograms, was the test subject in Table 2. As mentioned under "Method," the experiments were run blind in groups of 6 subjects. Some subjects received placebos while others received the drugs under discussion on the test run. Subject CG was very sensitive to LSD and similar compounds. In order to make certain that he was placebo negative, Experiments 1 and 2 were run with distilled water alone. The subject correctly estimated that placebos were present. Experiment 3 was a sub-threshold dose of BOL. The 25 and 35 mcg of LSD administered in Experiments 4 and 5 were successfully estimated by the subject, but in spite of 22 positive questionnaire responses in Experiment 6, he did not feel that he had received LSD. For this reason he was given a placebo in Experiment 7. This was followed in Experiment 8 with 25 mcg of LSD which the subject correctly estimated. Three congeners of LSD were administered in Experiments 9, 10 and 11 with the subject estimating the sub-threshold dosage correctly. Having thus established in eleven experiments that the subject was suitable for evaluation of psilocybin, CG was then given psilocybin. Experiment 12 discloses that with this subject 3 mg of psilocybin is equal to about 25 mcg of LSD. Six mg of psilocybin (Experiment 15) gave about a 35 mcg LSD response. Experiment 14 illustrates that this experienced subject could not distinguish between 50 mcg of LSD and psilocybin although in later experiments the group of test subjects as a whole learned to distinguish between the two drugs by the course of reaction rather than by the symptoms. Subject CG took 50 mg of psilocybin at home for seven days before taking 50 mcg of LSD (Experiment 15). The table shows that this subject developed tolerance to 4 mg of psilocybin while taking this compound at home, and that his response to 50 mcg of LSD was sub-threshold with cross-tolerance developing produced by psilocybin. Experiments 16 to 24 provide further data which we shall analyze subsequently on his reaction to psilocybin. It is of interest to mention that he was not confused by the scrambling of LSD and psilocybin in separate experiments and that his estimation of the dose of psilocybin or LSD or equivalent doses was remarkably accurate.

Subject III

Table 3 contains the data for subject PB, a male lawyer weighing 76 kilograms. Subject PB correctly estimated in Experiments 1 and 2 the dosage of LSD administered. Experiments 3 to 6 showed that he was still placebo negative. The data in Experiments 7 and 7-A are not valid because the patient was most concerned with personal problems. These matters were apparently resolved before Experiment 8 was performed with LSD in which his response and his estimate of the dosage of 50 mcg of LSD were correct. Experiment 9 shows that 1175 mcg of MLD administered for seven days prior to 75 mcg of LSD produced cross-tolerance. This subject was extremely sensitive to 75 mcg of LSD and the results in a

TABLE 2

(C. G., Male, Wt. 80 Kg.)

Key to abbreviations: N, number; LSD, d-lysergic acid diethyl amide; BOL, 2-bromo d-lysergic acid diethyl amide; LMP, d-lysergic acid methyl propyl amide; P, psilocybin; MLD, 1-methyl lysergic acid diethyl amide; LAE, d-lysergic acid ethyl amide; LEP, d-lysergic acid ethyl propyl amide; LME, d-lysergic acid methyl ethyl amide; Pn, psilocin; Ss, subjects; est, estimate; mg, milligram; mcg, microgram.

Exp. No.	Date	Drug	Number of Positive Questionnaire Responses Hours 0.5	1.5	2.5	3.5	Total N	Remarks
1	11/7/58	Placebo	0	6	0	0	6	Ss est "no reaction"
2	11/14/58	Placebo	0	0	0	0	0	Ss est "placebo"
3	12/5/58	100 mcg BOL	0	0	0	0	0	Ss est "no reaction"
4	1/23/59	25 mcg LSD	0	7	6	5	18	Ss est 25-35 mcg LSD
5	1/30/59	35 mcg LSD	0	9	6	5	20	Ss est 35 mcg LSD
6	2/13/59	25 mcg LSD	0	10	8	4	22	Ss est "Placebo" or below threshold
7	2/20/59	Placebo	0	0	0	0	0	Below threshold dose or placebo
8	2/27/59	25 mcg LSD	0	9	9	2	20	Ss est 25 mcg LSD
9	3/20/59	25 mcg LME 54	0	0	2	0	2	"No actual reaction"
10	4/24/59	25 mcg LEP 57	0	0	0	0	0	"No actual reaction"
11	5/1/59	100 mcg LMP 55	6	7	0	0	13	"Mild - 25 mcg LSD". Final est "Less than 25 mcg LSD".
12	5/8/59	3 mg P	0	8	3	2	13	Ss est 25 mcg LSD
13	5/15/59	6 mg P	12	11	3	3	29	Ss est 25-50 mcg LSD
14	5/22/59	50 mcg LSD	0	15	6	1	22	Stated definitely P. In error.
15	5/29/59	50 mcg LSD 50 mg P from 5/23 to 5/29/59	0	1	3	0	4	Tolerance to 4 mg P developed 5/29 in a.m. Ss est LSD; less than 25 mcg.
16	6/5/59	35 mcg LSD	0	15	13	7	35	Ss est 25-35 mcg LSD
17	6/19/59	Placebo	0	0	0	0	0	Ss est "Placebo"
18	7/17/59	8 mg P	0	21	17	9	47	Ss est "either 75 mcg LSD or 8-10 mg P
19	12/4/59	6 mg P	12	11	2	0	25	Ss est 8 mg P
20	12/11/59	35 mcg LSD	0	16	16	5	37	Ss est 25-35 mcg LSD

21	1/8/60	35 mcg LSD	0	10	8	5	23	Ss est 5 mg or 35 mcg LSD.
22	1/14/60	35 mcg LSD	0	12	10	9	31	Ss est 25 mcg LSD
23	1/29/60	20 mcg LSD	0	4	4	4	12	Ss est "placebo" or 15 mcg LSD or "euphoria"
24	2/5/60	4 mg P	0	15	8	3	26	Ss est 4-6 P

subject of this type are most spectacular, showing unequivocally that MLD easily produces cross-tolerance to LSD. With Experiments 1 to 9 forming a base-line for subsequent experiments with psilocybin and psilocin, the subject was administered 6 mg of psilocybin in Experiment 10. He estimated that this was equivalent to about 30 mcg of LSD. Experiment 13 is important because it illustrates that 98 mg of psilocybin administered in divided doses for 12 days prior to taking 75 mcg of LSD produced almost complete tolerance to LSD. Experiment 14 shows that the subject is placebo negative. In Experiment 15, 9 mg of psilocybin was correctly interpreted by the subject to be the largest dose of psilocybin to date. These experiments were continued to provide further data on the reaction of this subject to psilocybin and psilocin. The experiments terminated by testing the patient by both placebos and LSD, demonstrating that this subject was suitable for experiments of this type because of his placebo negative responses. Experiment 31 is of interest in connection with the effect of sub-threshold doses of mescaline. This did not produce cross-tolerance to LSD.

Subject IV

Table 4 (MZ) is the data on a male subject weighing 82 kilograms. This table provides us with 34 experiments showing the reaction of this subject to placebos, congeners of LSD, psilocybin and psilocin. In addition, the data in the table show that in subject MZ 815 mcg of MLD administered in divided doses for six days before the administration of psilocybin produced cross-tolerance. Larger doses of MLD administered ten days before 8 mg of psilocybin (Experiment 13) produced some cross-tolerance, but not completely. Experiment 15 was successful in showing two points; one, that 103 mg of psilocybin taken at home during the week produced minor symptoms due to the psilocybin itself, but produced cross-tolerance to LSD. Experiment 24 is of special interest because d-lysergic acid ethyl propylamide produced cross-tolerance to LSD. Data in this table also show the difficulties met by the members of this group of test subjects in their attempt to distinguish between LSD and psilocybin.

Subject V

Table 5 (RB) contains 33 experiments similar to those in Tables 1 through 4. This subject could not distinguish between LSD and psilocybin. In his case MLD produced some tolerance to psilocybin. Psilocybin

TABLE 3

(P. B., Male, Wt. 76 Kg.)

Key to abbreviations: N, number; LSD, d-lysergic acid diethyl amide; BOL, 2-bromo d-lysergic acid diethyl amide; LMP, d-lysergic acid methyl propyl amide; P, psilocybin; MLD, 1-methyl lysergic acid diethyl amide; LAE, d-lysergic acid ethyl amide; LEP, d-lysergic acid ethyl propyl amide; LME, d-lysergic acid methyl ethyl amide; Pn, psilocin; Ss, subjects; est, estimate; mg, milligram; mcg, microgram.

Exp. No.	Date	Drug	Number of Positive Questionnaire Responses					Remarks
			hr	1½ hr	2½ hr	3½ hr	Total	
1	11/7/58	35 mcg LSD	0	12	8	6	26	Ss est 50 mcg LSD
2	11/21/58	25 mcg LSD	0	9	7	7	23	Ss est 25-35 mcg LSD
3	3/12/59	25 mcg LME 54	0	5	4	2	11	Ss est less than 25 mcg LSD
4	3/20/59	25 mcg LME 54	0	2	0	0	2	Ss est zero
5	4/24/59	250 mcg LEP 57	0	2	0	0	2	Ss est "some reaction possible."
6	5/1/59	100 mcg LMD 55	0	2	0	0	2	Ss est "some slight drug effect."
			Patient participated but said that he was concerned with personal problems forcing his withdrawal from experiment.					
7a	5/15/59	6 mg P	0	1	1	0	2	Ss stated "dulled but no drug"
			Note that personal problems are probably still present with probable withdrawal.					
8	5/22/59	50 mcg LSD	0	7	5	6	18	Ss est 50 mcg LSD
9	5/29/59	75 mcg LSD 1175 mcg MLD from 5/23/59 to 5/29/59	0	0	0	0	0	Ss est "no reaction"
10	6/5/59	6 mg P	0	6	5	3	14	Ss est 25-35 LSD
11	6/19/59	6 mg P	2	4	4	3	13	6 mg P
12	7/17/59	6 mg P	8	6	6	3	23	Ss est 8 mg P
13	7/31/59	72 mcg LSD 98 mg P from 7/19/59 to 7/31/59	0	4	3	1	8	Less than 25 mcg LSD

14	12/4/59	Placebo	0	0	0	0	0	Ss est "no drug"
15	12/11/59	8 mg P	8	5	4	2	19	"Largest dose of P to date"
16	1/12/59	25 mcg LSD	0	6	4	0	10	Ss est 25 mcg LSD
17	1/8/60	8 mg P	8	5	5	4	22	Ss est 6 mg P P or LSD
18	1/15/60	8 mg P	3	1	6	3	13	Ss est 25 mcg LSD
19	1/22/60	8 mg P	8	8	4	5	24	Ss est 8 mg P
20	1/29/60	8 mg P LAE from 1/23/63 to 1/29/63	0	7	6	5	18	Ss est 6-8 mg P. No tolerance developed 3600 mcg
21	2/5/60	35 mcg LSD	0	7	7	4	18	Ss est 6 mg P
22	1/12/60	4 mg P	7	5	5	5	22	Ss est 6 mg P
23	2/19/60	4 mg P	0	2	0	0	2	Ss est "threshold reaction of some sort"
24	3/25/60	4 mg P At this point Psilocin was substituted for Psilocybin without informing the subject of the change	3	8	5	6	22	Ss est 25 mcg LSD
25	4/1/60	2 mg Psilocin	0	5	4	0	9	Ss est "threshold dose"
26	4/8/60	4 mg Psilocin	5	6	5	0	16	Ss est 4 mg P
27	4/15/60	6 mg Psilocin	7	7	7	3	24	Ss est 8 mg P
28	4/29/60	2 mg Psilocin	0	0	0	0	0	Ss est "slight reaction of some sort."
29	5/6/60	Placebo	0	0	0	0	0	Ss est "Placebo"
30	5/13/60	Placebo S received 260 mg mescaline in increasing doses previous week	0	0	0	0	0	Ss est "Placebo"
31	5/20/60	35 mcg LSD 1030 mg mescaline from 5/7/60 to 5/20/60	0	7	7	8	22	Ss est 25-35 mcg LSD. No cross tolerance developed.
32	5/27/60	35 mcg LSD	0	7	7	7	21	Ss est 35 mcg LSD

TABLE 2

(M. Z., Male, Wt. 82 Kg.)

Key to abbreviations: N, number; LSD, d-lysergic acid diethyl amide; BOL, 2-bromo d-lysergic acid diethyl amide; LMP, d-lysergic acid methyl propyl amide; P, psilocybin; MLD, 1-methyl lysergic acid diethyl amide; LAE, d-lysergic acid ethyl amide; LEP, d-lysergic acid ethyl propyl amide; LME, d-lysergic acid methyl ethyl amide; Pn, psilocin; Ss, subjects; est, estimate; mg, milligram; mcg, microgram.

Exp. No.	Date	Drug	Number of Positive Questionnaire Responses Hours 0.5	1.5	2.5	3.5	Total N	Remarks
1	11/21/58	35 mcg LSD	0	2	3	5	10	Ss est 25 mcg LSD
2	1/2/59	Placebo	0	0	0	0	0	"No reaction"
3	1/23/59	35 mcg LSD	0	6	6	5	17	Ss est 35 mcg LSD
4	1/30/59	35 mcg LSD	0	3	6	6	15	Ss est 35 mcg LSD
5	3/20/59	25 mcg LME 54	0	0	0	0	0	"No reaction"
6	4/24/59	25 mcg LEP 57	0	1	1	0	2	Ss est "threshold dose"
7	5/1/59	100 mcg LMP 55	0	4	5	1	10	Ss est 25-35 mcg LSD
8	5/8/59	3 mg P	0	8	3	2	13	Inner trembling; little anxiety; LSD equivalent 35 mcg.
9	5/15/59	6 mg P	0	7	2	0	9	Ss est 35 mcg LSD
10	5/22/59	6 mg P	0	5	6	2	11	Double Blind. "Different from LSD." Ss guess P; HAA guess LSD.
11	5/29/59	6 mg P 915 mcg MLD from 5/24 to 5/29/59	0	3	0	0	3	"LSD equivalent about 15 mcg." MLD produced cross-tolerance.
12	6/5/59	6 mg P	3	5	2	0	10	Ss est P equivalent 35-50 mcg LSD
13	6/19/59	8 mg P 4325 mcg MLD from 6/9 to 6/19/59	0	6	3	0	9	Ss est 4 mg P. Some cross-tolerance probably.
14	7/3/59	8 mg P	0	8	7	3	18	Ss est 6-8 mg P equivalent to 50 mcg LSD. Greater reaction than 6/19/59 when MLD administration preceded P.

15	7/16/59	50 mcg 103 mg P from 7/4 to 7/10/59	0	1	1	1	1	Noted symptoms of P during week; Ss est "no Por LSD." Cross-tolerance.
16	7/31/59	50 mcg LSD	0	7	12	8	27	Ss est LSD 50-75 mcg
17	12/4/59	Placebo	0	0	0	0	0	Ss est placebo
18	12/11/59	50 mcg LSD	0	9	11	12	32	Ss est 35 mcg LSD.
19	11/8/60	50 mcg LSD	0	4	9	3	16	Ss est 6-8 mcg P. Note normal decrease in reaction compared with Exp 18.
20	1/15/60	50 mcg LSD mcg LSD.	0	8	9	7	24	Ss est first 8 mg P; then changed est to 50
21	1/22/60	50 mcg LSD	0	2	8	6	26	Ss est 50 mcg LSD
22	1/29/60	50 mcg LSD 1 mg LAE from 1/22/60 to 1/29/60	0	5	10	7	22	Ss est 35-50 mcg LSD. Little cross-tolerance produced by LAE.
23	2/5/60	8 mg P	5	9	3	2	20	Ss est 8 mg P
24	2/12/60	50 mcg LSD 500 mcg LEP 57 from 2/5 to 2/12	0	1	1	1	3	Ss est "on the verge"; "felt queer". No definite symptoms. Cross-tolerance.
25	2/19/60	4 mg P	0	4	2	0	6	Ss est 6 P
26	3/11/60	4 mg P	0	5	3	2	10	Ss est 4-6 P
27	3/25/60	4 mg P	0	5	9	2	16	Ss est 4-6 mg P
28	4/1/60	2 mg Pn Psilocin substituted here for P	0	6	4	0	10	Ss est threshold to 4 mg P
29	4/8/60	4 mg Pn	7	11	5	1	24	Ss est 6 mg P
30	4/13/60	6 mg Pn	0	17	7	4	28	Ss est 8 mg P
31	4/29/60	2 mg Pn	0	2	3	0	5	Ss est threshold to 3 mg P
32	5/6/60	Placebo	0	1	1	0	2	Ss est threshold to 2 mg P
33	5/13/60	Placebo 260 mg mescaline administered from 5/7/60 to 5/13/60	0	0	0	0	0	Ss est "no reaction"
34	5/20/60	35 mcg LSD	0	8	9	3	20	Ss est 25 mcg LSD

TABLE 5

(R. B., Male, Wt. 86 Kg.)

Key to abbreviations: N, number; LSD, d-lysergic acid diethyl amide; BOL, 2-bromo d-lysergic acid diethyl amide; LMP, d-lysergic acid methyl propyl amide; P, psilocybin; MLD, 1-methyl lysergic acid diethyl amide; LAE, d-lysergic acid ethyl amide; LEP, d-lysergic acid ethyl propyl amide; LME, d-lysergic acid methyl ethyl amide; Pn, psilocin; Ss, subjects; est, estimate; mg, milligram; mcg, microgram.

Exp. No.	Date	Drug	Number of Positive Questionnaire Responses Hours 0.5	1.5	2.5	3.5	Total	Remarks
1	11/21/58	25 mcg LSD	1	0	1	1	3	"Like one cocktail"
2	12/5/58	50 mcg LSD	5	7	5	3	20	Ss est 35-50 mcg LSD
3	1/2/59	25 mcg LSD	0	4	4	3	11	Ss est 50 mcg LSD
4	1/23/59	35 mcg LSD	2	4	4	3	13	No anxiety; Ss est 25-35 mcg LSD
5	3/20/59	25 mcg LME 54	0	2	0	0	2	Less than threshold
6	4/24/59	25 mcg LEP 57	0	0	0	0	0	Less than threshold
7	5/1/59	100 mcg LMP 55	1	0	0	0	1	Less than threshold
8	5/8/59	3 mg P	0	1	1	1	3	LSD equivalent — less than 25 mcg
9	5/15/59	6 mg P	0	3	2	0	5	Ss est 25 mcg LSD; "different from LSD"
10	5/25/59	6 mg P	1	2	1	0	4	Ss & HAA est LSD; no inner trembling; Ss est LSD equiv — 35 mcg.
11	5/29/59	6 mg P 1175 mcg MLD from 5/24 to 5/29/59	0	1	0	0	1	Ss est 25 mcg. Tolerance probably developed.
12	6/5/59	6 mg P	0	3	1	1	5	Ss est 50 mcg LSD or 6 mg P
13	6/19/59	8 mg P 4325 mcg MLD from 6/9/59 to 6/19/59	1	1	0	0	2	Ss est less than 6 mg P or 25 mcg LSD
14	7/3/59	8 mg P	0	6	2	1	9	Ss est 8 mg P
15	7/17/59	75 mcg LSD 103 mg P from 7/4 to 7/11/59	0	1	1	1	3	Ss est less than threshold dose of LSD. Cross-tolerance developed.

16	7/31/59	50 mcg LSD	0	3	2	2	7	Ss est 5 mg P or 25 mcg LSD
17	8/14/59	50 mcg LSD	0	4	2	1	7	Ss est 6 mg P or 35 mcg LSD
18	9/4/59	35 mcg LSD	0	1	2	1	4	Ss est 25 mcg LSD
19	12/11/59	8 mg P	2	4	2	3	11	Ss est 6 mg P
20	1/8/60	8 mg P	1	4	2	2	9	Ss est 6-8 mg P
21	1/15/60	8 mg P	0	7	3	2	12	Ss est 50 mcg LSD
22	1/22/60	8 mg P	0	5	3	2	10	Ss est 8 mg P
23	1/29/60	8 mg P 7000 mcg. LAE from 1/22/60 to 1/29/60	0	4	4	2	10	Ss est 8 mg P. No tolerance developed
24	2/12/60	8 mg P LEP from 2/5 to 2/12	0	1	1	0	2	Ss est 4 mg P. Some tolerance1000 mcg
25	3/11/60	4 mg P	0	2	2	1	5	Ss est 25 mcg LSD
26	3/25/60	4 mg P	0	6	4	2	12	Ss est 6 mg P
27	4/1/60	2 mg Pn	0	1	1	2	4	Ss est "sub-threshold dose"
28	4/8/60	4 mg Pn	1	2	2	1	6	Ss est 25 mcg LSD
29	4/29/60	2 mg Pn	0	3	1	1	5	Ss est "low 4 mg P"
30	5/6/60	Placebo	0	0	0	0	0	Ss est "Placebo"
31	5/13/60	Placebo	0	0	0	0	0	Ss est "Placebo"
32	5/20/60		0	1	3	5	9	Ss est 25-35 mcg LSD. Anomalous reaction.
33	5/27/60		0	3	5	4	12	Ss est a 35 mcg LSD or 4 mg P

produced tolerance to LSD (Experiment 15). LEP 57 produced some tolerance to psilocybin confirming our other data.

Subject VI

Table 6 (DVG) contains the data for a female weighing 68 kilograms. The data in this table again illustrate in the first few experiments the ability of the subject to estimate the LSD dosage and to respond negatively to placebos. Experiment 8 shows that MLD produces cross-tolerance to psilocybin. A similar phenomenon was observed in Experiment 10. This subject reacts to 6 mg of psilocybin as about equivalent to 35 to 50 mcg of LSD. In experiment 12, 103 mg of psilocybin administered for two weeks previous to the administration of 75 mcg of LSD produced cross-tolerance. An interesting experiment was that in which a placebo

administered for seven days before the administration of 8 mg of psilocybin did not produce cross-tolerance (Experiment 19). The data in this table also show as in the others that the subject could not always distinguish between LSD and psilocybin.

METHYSERGIDE

Four members of the group volunteered to make a study of their responses to methysergide. The same questionnaire was employed. The setting was again the same social setting described previously. These data are given in Table 7 where doses between 5.5 and 7.5 mg of methysergide were administered as described under "Method." Note in the table that subject RB estimated that 5.5 mg of methysergide was approximately equal to 25 mcg of LSD. He also reported that on arriving home five hours after he had taken the drug he experienced a delusion on going to bed of feeling that he was lying in bed between his wife and a giant cat. It is important to note that the effects of methysergide lasted longer in our test subjects, and patients as well, (5) up to six or seven hours as compared to the action of LSD which was an hour or two shorter. Subject MZ also felt that methysergide gave a typical LSD reaction, he having 34 responses to 5.5 mg of methysergide. In Experiment 2 MZ successfully detected a placebo and in the third experiment felt that 5.5 mg of methysergide was equivalent to 25 mcg of LSD.

Subject PB felt that his 26 questionnaire responses represented an "atypical LSD reaction," and that the subsequent administration the following week was about half as severe. According to subject CG, 3.5 mg of methysergide produced a full-blown, typical LSD reaction equal to 25 mcg of LSD. The following week the subject detected a placebo.

The data in Table 8 are the result of averaging the estimates of the equivalence of psilocybin and LSD on the basis of the data obtained from all six subjects. The average threshold dose of psilocybin is 3.4 mg. One mcg of LSD 25 is equal to approximately 135 mcg of psilocybin.

A similar calculation in Table 9 discloses that the threshold dose of methysergide is 4.3 mg. One mcg of LSD 25 is, using our method of study, equivalent to 170 mcg of methysergide. It takes about 1 mg more of methysergide than psilocybin to produce "side effects." We will disclose the meaning of "side effects" in the next section.

DISCUSSION

It may be surprising that we have compared reactions produced by methysergide (Sansert) to those produced by LSD and psilocybin. However, psychic effects due to the administration of methysergide have been reported previously. For example, Graham (6) states "in about 20 percent of the patients side effects were so unpleasant or disabling that

TABLE 6

(D. V. G., Female, Wt. 68 Kg.)

Key to abbreviations: N, number; LSD, d-lysergic acid diethyl amide; BOL, 2-bromo d-lysergic acid diethyl amide; LMP, d-lysergic acid methyl propyl amide; P, psilocybin; MLD, d-methyl lysergic acid diethyl amide; LAE, d-lysergic acid ethyl amide; LEP, d-lysergic acid ethyl propyl amide; LME, d-lysergic acid methyl ethyl amide; Pn, psilocin; Ss, subjects; est, estimate; mg, milligram; mcg, microgram.

No.	Date	Drug	Number of Positive Questionnaire Responses Hours 0.5	1.5	2.5	3.5	Total N	Remarks
1	11/7/58	35 mcg LSD	0	6	5	3	14	Ss est 35-50 mcg LSD
2	1/2/59	25 mcg LSD	0	5	5	2	12	Ss est 25 mcg LSD
3	1/30/59	35 mcg LSD	0	5	4	4	13	Ss est 25-35 mcg LSD
4	3/20/59	25 mcg LME 54	0	0	0	0	0	Ss est "no reaction"
5	5/1/59	100 mcg LMP 55	0	0	0	0	0	Ss est sub-threshold
6	5/15/59	6 mg P	4	8	3	0	15	Ss est equiv 50 mcg LSD
7	5/22/59	6 mg P Double blind	4	8	3	0	15	Ss guessed P
8	5/29/59	6 mg P 1200 mcg MLD from 5/24 to 5/29	0	0	0	0	0	"No reaction". Cross-tolerance developed.
9	6/5/59	6 mg P	0	7	3	0	10	Ss 35 mcg LSD equivalent
10	6/19/59	8 mg P 4325 mcg MLD 6/9 to 6/19/59	0	0	0	0	0	Ss est "no reaction". Cross-tolerance developed.
11	7/3/59	8 mg P	0	10	4	0	14	Ss est 50 mcg equivalent
12	7/17/59	75 mcg LSD 103 mg P from 7/4 to 7/17	0	0	0	0	0	Ss est "no reaction." Cross-tolerance developed.
13	8/14/59	50 mcg LSD	0	4	4	0	8	Ss est 35 mcg equivalent
14	12/11/59	50 mcg LSD	0	7	5	3	15	Ss est 35-50 mcg LSD
15	1/8/60	50 mcg LSD	0	6	6	3	15	Ss est 35-40 mcg LSD
16	1/15/60	50 mcg LSD	0	2	5	3	10	Ss est 35 mcg LSD
17	1/22/60	50 mcg LSD	0	6	5	3	14	Ss est 35-50 mcg LSD
18	1/29/60	50 mcg LSD	0	3	4	1	8	Ss est 35 mcg LSD. Milder than last week. Possible slight cross-tolerance.

19	2/5/60	8 mg P Placebo administered 1/30 to 2/5/60	4	6	3	1	14	Ss est 6-8 P
20	2/12/60	50 mcg LSD 100 mcg LEP 57 from 2/5 to 2/12	0	3	4	0	7	Ss est 25 mcg LSD. Probable cross-tolerance developed.
21	3/11/60	4 mg P	0	4	2	0	6	Ss est 4-6 mg P
22	3/25/60	4 mg P	0	5	3	0	8	Ss est 6 mg P
23	5/13/60	Placebo	0	0	0	0	0	Ss est Placebo
24	5/20/60	35 mcg LSD	0	5	5	3	13	Ss est 4-6 P or 35-50 LSD
25	5/27/60	35 mcg LSD	0	6	5	3	14	Ss est 35 mcg LSD

the drug had to be discontinued." He lists symptoms developing in the course of treatment with 9 mg per day as insomnia, jitters, giddiness, depressed feelings, faintness, a dreamy state, paresthesia, including tingling and numbness. The absence of hallucinations is hardly critical because in hundreds of LSD experiments by the writers and their co-workers, hallucinations have been rare. Friedman (7) states that in 167 patients treated for less than two months, 94 patients had side effects and 63 of these had to discontinue the drug because of the severity of signs and symptoms similar to those reported by Graham. When side effects appeared it was frequently noted that the symptoms abated or remained mild if the patient *could tolerate them for several days.* In view of the rapidity in which tolerance developed to MLD, it is not surprising that tolerance to methysergide develops since methysergide has butanol substituted for the two ethyl groups in LSD. Friedman lists among the side effects weakness, dizziness, vertigo, unsteadiness, paresthesia, drowsiness, confused feelings of unreality, distortion of body image and apprehension. Certainly these symptoms also are listed in the questionnaire which we have repeatedly used to study the LSD response and are characteristic of LSD reactions. It may be mentioned also that experiments with Mrs. Gettner show that methysergide affects Siamese fighting fish and goldfish in the same way that LSD does but that a higher dose is needed. That is, the surfacing reaction and a state of stupor occur. Methysergide also causes snails to develop the persistent convulsive wavelike motion produced by LSD. It would be of interest to ascertain if methysergide produces cross-tolerance to LSD, although presence of vascular effects might make this experiment difficult.

Methysergide like LSD is a derivative of d-lysergic acid and, as mentioned, requires slightly more than 4 mg in our non-psychotic test group

TABLE 7

The Response of Test Subjects to Methysergide (Sansert) (UML-491)

Exp. No.	Date	Dose	Number of Positive Questionnaire Responses Hours 0.5	1.5	2.5	3.5	Total	Remarks
		m.g.						
1. R. B.	11/8/63	5.5	0	2	2	1	5	Ss est 25 mcg LSD
2. R. B.	11/15/63	5.5	0	1	2	3	6	Ss est 25 mcg LSD. Delusion on arriving home: "lying in bed between wife and giant cat."
3. R. B.	11/22/63	7.5	0	2	2	1	5	Ss est 25 mcg LSD
1. M. Z.	11/8/63	5.5	0	9	18	7	34	Ss est 50 mcg LSD. Reaction prolonged.
2. M. Z.	11/15/63	Placebo	0	0	0	0	0	Ss est "placebo"
3. M. Z.	11/22/63	5.5	0	0	9	14	23	Ss est 25 mcg LSD. Note that at 4.5 hrs. 8 responses were obtained. Reaction was evidently delayed.
1. P. B.	11/8/63	3.5	0	10	10	6	26	"Atypical LSD reaction; weight on chest. Couldn't estimate dose."
2 P. B.	11/15/63	3.5	0	2	3	5	10	Ss est one-half of last week. Reaction not over at 3.5 hrs.
3. P. B.	11/22/63	Placebo	0	0	0	0	0	Ss est placebo
1. C. G.	11/8/63	3.5	0	8	10	4	22	Ss est "full blown LSD of 25 mcg"
2. C. G.	11/15/63	3.5	0	9	10	10	29	Ss est 25-35 mcg LSD
3. C. G.	11/22/63	Placebo	0	0	0	0	0	Ss est placebo

to produce effects that the test group finds similar to those of LSD. In the early experiments reported in the literature with methysergide, much larger doses than 2 mg were administered. Two mg is the present recommended dose for treatment and this turns out to be about half that of the threshold LSD equivalent dose found in this study. The data in this study, therefore, do not contradict those already published in the literature where methysergide was used as a therapeutic agent. In this study the side effects" are considered the primary phenomena, the result of the drug itself. We would like to take this opportunity of pointing out that there is no evidence whatsoever of brain damage due to methysergide and we feel the data relative to the clinical use of LSD are in the same category in spite of the fantastic controversy on this point taking place at this time.

In recent months the dangers of using d-lysergic acid diethylamide

TABLE 8

The Threshold Dose of Psilocybin in mg Calculated on the Basis of 25 mcg *of LSD-25 as the Threshold from Subjects' Estimates*

J.G.	3.6
C.G.	3.1
P.B.	3.1
M.Z.	3.4
R.B.	3.6
D.V.G.	3.6
Av.	3.4

1 mcg LSD-25 = 136 mcg Psilocybin.

(LSD 25) have been highlighted in the lay press. Unfortunately these warnings for the most part show more anxiety than experience in the use of this compound by the writers. These reports do not discriminate between the effects of the drugs when prescribed by a physician and the unpredictable results of self-administration. There is, however, a considerable body of evidence showing that compounds like LSD 25 and Sansert are safe to use when administered by physicians. Thus in a careful statistical survey Cohen points out that *no instance of serious prolonged physical side effects* was found either in the literature or in the answers covering more than 25,000 administrations of LSD or mescaline. He points out that the literature records directly only one suicide in a schizophrenic patient and a small number of short self-limited psychotic reactions. He concluded that the administration of LSD is safe when given to a healthy selected group. With the application of certain safeguards, many side effects can be avoided. (8) Ditman, Hayman and Whittlesey (9) studied the effect of the administration of 100 mcg of LSD 25 orally in a permissive but non-treatment setting. Using a questionnaire they studied the effect of the LSD experience without psychotherapy. Claims of therapeutic value of the LSD experience were made by 74 of their 97 subjects. The only claims of the subjects were comparable to the most optimistic claims of investigators who used it with prolonged and intensive

TABLE 9

The Threshold Dose of Methysergide in mg Calculated on the Basis of 25 mcg of LSD-25 as the Threshold from Subjects' Estimates

C. G.	3. 1
P. B.	3. 5 produced "atypical LSD reaction"
M. Z.	3. 6
R. B.	6. 2
Av.	4. 3

1 mcg LSD-25 = 170 mcg methysergide.

psychotherapy. For one and a half years after exposure to LSD a high percentage of alcoholic patients claimed to have decreased their drinking and about one third claimed complete abstinence. *There is no evidence of brain damage in this group, only improvement occurring in a very large fraction.* It seems important to stress at this time that many derivatives of d-lysergic acid play a most important role in medical treatment. (10) To label any one of these derivatives as the cause of "chronic brain damage" without direct evidence, validated statistically, constitutes a disservice to science and to the practice of medicine.

Recent studies with d-lysergic acid diethylamide (LSD 25) and 1-methyl d-lysergic acid butanolamide (Sansert) by Bender and her co-workers (11) indicate that both of these compounds are of great value in the treatment of hospitalized disturbed children. Thus Bender, Faretra and Cobrinik report the results of treatment of autistic children, showing all degrees of severity of symptoms of anxiety. When treated with both LSD and Sansert they showed definite positive changes in response to their environment. Many of the children became aware of the realistic situation of their hospitalization, of family problems, and achieved new insights into their psychological deviations. The results of psychological testing confirmed the improvement in the level of functioning from an overall point of view. *There was no evidence of increased brain damage in these children. Indeed they were helped in adapting to life. It is important to emphasize that the dosages of LSD given daily were well above the adult threshold levels.*

The weight of the evidence is that all of the compounds in this study are safe to use in the hands of qualified physicians. The writers believe that the use of MLD and LSD in the treatment of migraine and similar phenomena, especially allergic phenomena, is of the greatest importance. The discoveries of Hoffman have opened new routes to medical progress. It is only by including the practicing physician in clinical investigations that this progress can be achieved. Further applications of the use of d-lysergic acid derivatives in clinical medicine hold future promise.

SUMMARY

The extensive use of methysergide in the treatment of patients with migraine and the frequent occurrence of side effects, has led us to make a comparative study of the effects of methysergide (Sansert) in the same test subjects that have been used in the study of psychotomimetic drugs for the past ten years. The same six subjects were repeatedly used in the present series with the dosage of drugs being either above the threshold level or being 2 or 3 times above threshold symptoms. In order to assay the effect of the drugs the Cold Spring Harbor questionnaire in use for the past thirteen years in the comparative studies of psychotomimetic drugs was employed. Data from more than 150 experiments including placebo trials are presented. Although it was found that differences in the rates ofaction and in the duration of action were observed, the effects of the

drugs, as measured by the questionnaire, were strikingly similar at their respective dosages just above the threshold level and at 2 to 3 times above these levels. 170 mcg of methysergide and 135 mcg of psilocybin are estimated to be equal to 1 mcg of LSD near the threshold level of dosage. Clinically speaking, this fits in fairly well with dosages that are employed (1) in the treatment of migraine with methysergide if psychic effects are to be avoided and (2) in the use of methysergide in psychoanalytically oriented therapy where low dosages are utilized.

DISCUSSION

Dr. Fremont-Smith: Thank you. I think we will have about three questions now.

Dr. Savage: The first question is: do you have a regression line for the UML?

Dr. Abramson: No, we don't as yet. It's a good question.

Dr. Savage: Have you found that LSD is useful for migraine?

Dr. Abramson: I have never used it for that, but I would like to support Sandoz' view that Sansert is very useful for migraine.

Dr. Savage: I ran across a report in the "Herald Tribune" that Sansert causes kidney stones. Do you think there's anything to that?

Dr. Abramson: No, I don't. I think Sansert is a pretty safe drug to use.

Dr. Freedman: Well, this is in the way of a pharmacological footnote. We've used Dr. Abramson's questionnaire in man and also have found that the kind of dose-effect relationships that you've reported in man can be replicated in rats and other animals without the operant conditioning setup. On most of these we do not find behavioral effects of Sansert. Similarly, when we're measuring the brain amine—

Dr. Abramson: What dosage of Sansert?

Dr. Freedman: Those doses in animals equivalent to those of your report, up to 5 mg/kg. We're measuring the brain amines; these will discriminate the psychoactive drugs of this class in terms of serotonin and non-epinephrine effects, but Sansert, again, has no effect on these, and I think that when we're trying to work out the pharmacology of these things a little further, we'll find that Sansert probably has vascular effects. Probably the drug is held in plasma and, like LSD, high concentrations in plasma could effect the carotid sinus and produce mental effects, and perhaps not act directly on the brain; so that it might be interesting if we found out the mental effects or reactions to perception of bodily change contingent upon peripheral-central feed backs and differentiate these from direct central effects seen with LSD.

Dr. Abramson: Right. I do agree that because of the vascular effect of Sansert in the dosages employed, we have a double effect: one, the effect of the lysergic acid derivative, that is, the methyl butanolamide and its interaction with the vascular effect. But, in man, how

would you account for the side effects reported for Sansert, which include all of the psychotomimetic effects, although with less frequency? Would you blame those on vascular effects also?

Dr. Freedman: I just don't know. I want to point out that it's a grave problem that's going to have to be investigated.

Dr. Fremont-Smith: At least we have in the rat some evidence of the difference between LSD *25* and Sansert?

Dr. Freedman: Oh, yes.

Dr. Fremont-Smith: And it is, I think, to be expected that they would not have identical effects in all species.

Evaluating LSD as a Psychotherapeutic Agent

Keith S. Ditman, M.D. *

Joseph J. Bailey, M.D. **

Claims of benefit from psychiatric treatments, whether psycho or somatic therapies, exceed their specific effectiveness. Explanations for this include patients' expectancies of benefit, non-specific effects of procedures or drugs, the therapist's enthusiasm, environmental suggestions, the authority of the therapist, and the treatment setting. Then there is the difficulty in evaluating change in a given condition. A "placebo response" is common to all drugs, regardless of action.

The psychotomimetics, LSD 25, mescaline and psilocybin, are a particularly interesting group of drugs when it comes to this problem of what is producing the effect. Do these potent changers-of-consciousness achieve their claimed therapeutic effects by specific drug action, or by just acting as placebos? In this regard Malitz (1) reports that in over 400 cases, given these drugs in a research setting where little in the way of therapeutic effects were suggested, he has never seen a single case of sustained therapeutic benefit. But reports of benefit from the psychotomimetics abound in lay and professional publications, and in many instances these are sensational in nature.

The psychotomimetics differ from the tranquilizers, anti-depressants and sedatives, in that enthusiastic claims of benefit come from a variety of patients, from normal individuals, and from therapists who have been subjects. It would be hard to overstate the extent of these claims; they include improvement in subjective and behavioral difficulties, and the production of experiences beyond ordinary consciousness, having spiritual and therapeutic value. These claims are made when the drugs are used as adjuncts to psychotherapy as well as when they are taken without formal psychotherapy. An excellent example of reported benefit from mescaline is noted in "Crashing Thunder," an autobiographical account of an American Indian, edited by Paul Radin (2) and published in 1926. Of value is the fact that this reformation of an individual who had had a true rake s

* Director, Alcoholism Research Clinic, Department of Psychiatry, U. C. L. A. Center for the Health Sciences, Los Angeles.

** Chief Psychiatrist, Douglas-Young Clinic, Mesa Vista Hospital, San Diego.

progress, even for an Indian, antedates the present era of psychopharmacology, and its enthusiasm for drugs, and was achieved outside the then existing confines of modern psychotherapy.

Although one may have reservations as to the value of these reported changes, it is undeniable that many claims of benefit are made. It should be noted that, for the most part, the conditions prior to treatment were subjective and behavioral disturbances that often are improved by placebos, hypnosis, the brief psychotherapies, suggestion and religious conversions. However, the frequency, extent, rapidity of occurrence and enthusiastic endorsement of these claims of benefit are impressive enough to suggest that a specific effect may be operative in addition to the "placebo response."

Literature on the psychotomimetics as treatment has become voluminous, and, as one might suspect, many of the authors see the action of the drugs in terms of their own psychotherapeutic orientation—be it Freudian, Jungian, religio-mystic, or otherwise. The following are some explanations from the literature: the drug enhances recall; increases insight into conflicts; weakens and simplifies ego defenses; mobilizes anxiety which in turn causes symptom or symbolic formation that can be interpreted; enhances the integrative process of the ego; facilitates the transference phenomenon; intensifies interpersonal relationships; produces "self surrender"; and stimulates emotional growth in the areas of self-concept, self-understanding and self-acceptance. Improvement is claimed in schizophrenics, neurotics, sexual perverts, persons with phobias and character disorders, and in alcoholics.

Lacking are well controlled or double-blind studies. Although the drugs may release unconscious, conflictual material, indications that this is so are mainly anecdotal reports, not concurred in by all. Some consider such drug-released material to be mainly toxic distortions and not just unconscious material.

Since psychotherapists with different orientations and techniques claim benefits using these drugs, and since benefits are claimed with the drugs in the absence of formal psychotherapy, perhaps there is something about the effect of the drugs, when taken under certain circumstances, that leads to claims of benefit. The known pharmacology of the psychotomimetics has little to offer, even for speculation, in this regard, but the psychological effects of these drugs are worth considering. (Since there are a number of reports indicating similarities in the experiences from these three drugs, those for LSD will be used.)

Outwardly the LSD subject appears mildly intoxicated but otherwise not particularly unusual. Indications of preoccupation, of thought and mood disturbances direct attention to the importance of the subjective aspects of the reaction. Studies of this experience by inferences drawn from clinical appraisals and psychological tests are helpful, but they have limitations. Because of the subjective nature of the experience and the absence of amnesia, it appears that a phenomenological inquiry might be rewarding. Many narrative accounts of the LSD experience have emphasized early apprehension and mild nausea; a later sense of heightened

awareness; kaleidoscopic play in visual perception; intensification of colors; visual, auditory and even tactile after-images; synesthesia, a sense of an increased rate and number of thoughts, and the illusions, hallucinations and delusions. However, few attempts have been made to systematically obtain a "common reference experience" by averaging accounts of a number of subjects.

The 18 categories listed below in Table 1 represent the composite experience of 74 subjects who had 100 to 200 mcg of LSD orally in a clinical setting without psychotherapy. This was obtained by having each subject, after he recovered from the drug, sort 300 cards, each containing different statements descriptive of the LSD experience, on the basis of how well the cards described the experience. The statements were culled from numerous accounts of the experience, and represented fairly completely the varieties given. These 300 items were then grouped into 18 categories, rank-ordered, so that the first are most highly descriptive of the experience. (3)

TABLE 1

Categories Descriptive of LSD Experience

1. Euphoria, humor, relaxation
2. Understanding, meaning
3. Mystical sense of wonder
4. Aesthetic appreciation
5. Empathy or human closeness
6. Unity or religious feelings
7. Alertness
8. Perceptual distortion
9. Thoughts, recollections
10. Unusual body sensations
11. Somatic discomfort
12. Hypnagogic Feelings
13. Imagery
14. Depression
15. Delusional, paranoid
16. Hostility, irritation
17. Anxiety, fear
18. Hallucinations

As can be seen, there is a variety of moods, sensations and thoughts representative of the experience. The first category indicates that LSD is primarily a euphoriant, relaxing drug. The next five categories indicate that the drug produces feelings of greater understanding and awareness, deeper insights and enhanced aesthetic appreciation. This sense of increased understanding can be in the areas of self, of others, and of ideas, including philosophical, spiritual or religious ones. For example, one subject felt that after LSD he had "gained insight into the most important issues of existence as presented by the major world religions in their most esoteric aspect, and that listening to Bach's music he realized that Bach's secret of success was the application of this Highest Truth." Feelings of distortion or toxicity are also present in the LSD experience, but are less descriptive. Such feelings include perceptual distortions, unusual body sensations, dysphoria and depersonalization. Mood disturbances such as depression and anxiety occur, as well as thought disturbances such as delusions and paranoid feelings, but they too are less descriptive of the experience. It can be seen from the last category (18. Hallucinations) that calling these drugs "hallucinogens" would appear to be standing the truth on its head.

The LSD experience, then, is one with many facets, but is principally one of intense euphoria, beauty, pleasure and the feeling of achieving profound insights. It is this markedly heightened sense of profundity or awareness, in conjunction with the intense euphoria and sense of beauty, that is unique to this class of drugs and perhaps creates a greater *impressionableness*. It is as if internal and external stimuli take on a greater valence in awareness.

Although there is little neurophysiological data to explain these drag effects, one might speculate that the brain has had a decrease in a negative feed back system so that reactions to stimuli go undampened. Another explanation might be like the psychoanalytical one for schizophrenia, namely that psychic energy (libido) is withdrawn from external reality and freed for attachment to internal thoughts and feelings, resulting in an overly charged viewpoint such as a feeling of "great understanding" or even a delusion. Visual, auditory and tactile after-images, the synesthesiae, the preoccupations, the intensification of colors, the kaleidoscopic play in visual perception, the feelings of intense awareness and deep profundity indicate that stimuli, whether external or internal, become overly impressed on consciousness.

An increased *impressionableness* could make one more susceptible to external direction or suggestion, but the change does not appear to be increased suggestibility alone. Increased suggestibility is reported with certain sedatives, but is not accompanied by increased awareness or *impressionableness* and clear recall. Under LSD, the subject becomes more controlled by what catches his attention, from internal or external stimuli, and, once so attending, he receives a more intense and lasting impression. Consequently, a commonplace object can take on great significance; religious or philosophical views can take on new, profound meanings. With the mind altered so that it closes more determinedly on a certain idea, good or bad effects can ensue. The LSD experience then becomes unpredictable, or like a two-edged sword. It is not always possible to control what the patient is going to mentally attend to. He may do as one subject reported he did, become preoccupied with a man in a picture, develop a whole thought system about him and have delusional ideas of reference for weeks after the drug experience. One of our women subjects with strong early religious training became preoccupied with a light, and it soon took on such emotional intensity that for some months after the experience she referred to it as the "White Light of God."

Most of our subjects who experienced LSD did not have, in their opinion, undesirable after effects. Of 74 subjects in our follow-up study (4), 80 percent reported their experience as beautiful, happy, beneficial and worth trying again, and many claimed that the experience produced in them profound psychological, philosophical and religious insights. Only one-half of this group were patients and the rest were normal subjects. None received formal psychotherapy with the drug.

A drug that produces such pleasure and heightened *impressionableness* could permit some powerful persuasion to take place, depending on personality of the patient, his expectancies, the setting, the therapist

and what is suggested. Unfortunately, as yet the outcome from the drug experience is not always predictable, and psychiatric classification aids little in this. For example, we have seen emotionally maladjusted people report improvement, while apparent normals had experiences that left them upset for months. One psychoanalyst had a prolonged period of hypochondriasis following one LSD experience. If these drug effects are not specific treatments, but permit other treatments or influences to operate, how should they be classified? On the other hand, what is achieved from the drugs may be nothing more than a marked placebo response. They are powerful persuaders, but may be only enhancing the placebo response by impressive but non-specific effects which fulfill the patient's expectancies. As with changes from the placebo response, these changes occur promptly, are relatively enduring and, our findings suggest, they are correlated with the pleasure and the reported intensity of the experience (4).

If the subject is the "susceptible" type, and the drag experience is intense, there may be an extension of the placebo response to a religious-like conversion reaction. This is what happened, according to Paul Radin, (2) to the Indian who took mescaline in "Crashing Thunder." Conversion, according to William James, (5) is one of many phases, "to note the process, gradual or sudden, by which a self hitherto divided and consciously wrong, inferior and unhappy becomes unified and consciously right, superior and happy in consequence of its firmer hold upon religious realities." A conversion reaction has three parts; one, a need for a change (such as in neurotic suffering); two, an overpowering and ecstatic experience, usually revelatory in nature; and third, a new, radiant outlook which gives greater comfort and is concurred in by significant individuals within the patients' environment. However, these religious conversions are often of limited duration, as they are with placebo treatments, and as they were with our LSD subjects.

It would seem from the literature that those who are most enthusiastic about LSD seem to report the better therapeutic results with this drug. One is uncertain whether this enthusiasm is a reflection of successful treatment, or vice-versa. Since most of these LSD investigators have taken the drug, the possibility that their attitudes might be influenced by their own LSD experience is an important consideration. Nevertheless, in addition to the fact that treatment is short term and economical, there are enough enthusiastic claims for LSD to warrant further investigation into its usefulness in treating alcoholics.

One approach in assessing the effectiveness of LSD in producing desirable changes in behavior of chronic alcoholics would be to compare an LSD-treated group with a group receiving an active placebo (such as Ritalin) and another group acting as a non-treatment group, or as a control, receiving only one session of group psychotherapy. The three groups should be followed periodically and their responses and progress, whether favorable or unfavorable, compared and evaluated. Comparisons should be made between the groups, and also on an individual basis with patients who compose the groups.

To date, there has been no large, well-controlled, double-blind study treating alcoholics with LSD 25 and comparing this with an active placebo and a non-drug treatment control group. We propose such a study in view of our previous favorable experience with LSD in treating the alcoholic patient (4, 6). We are particularly interested in subsequent behavioral changes in patients.

A "quantitative" description of what each individual expects from the LSD experience, including the extent of the transcendental or mystical nature of the experience, will be obtained by having him sort 355 cards (a list expanded from that mentioned previously). (7) Following the drug experience, the cards will be sorted again, allowing the patient to give an account of his actual experience. The relationship between the expectancy of the experience and the type of experience as measured by the card sort, and the subsequent behavioral changes in the individual will be correlated.

The statements used on these 355 cards were taken not only from LSD literature and LSD subjects, but from delirium tremens patients, and from suggestions made by colleagues of items that would be expected to describe aspects of the mystical experience and psychotic experiences.

The cards are sorted into seven piles under seven different index cards (see chart following Summary, Page 80). Three cards are like the LSD experience, three are unlike the LSD experience and one is a neutral card for items neither like or unlike the experience. Index card 7 is labelled "very much like the experience," index card 5 is labelled "a little like the experience," and so forth.

Twenty-five of these 355 cards comply with the criteria of William James and Bertrand Russell. Using these criteria for the mystical experience, each patient's drug experience is evaluated for a mystical experience by two methods: 1. The positive scores given by the patient to the 25 cards covering the mystical category are summed; that is, a possible score could range from 175 (if all 25 cards were put in the 7 column) to 25 if all were put in the 1 column. 2. Evaluation of the patient's written account of the experience by three, different trained persons is ascertained, using a graded 6-point scale, "5" being the most mystical and "zero" indicating no mystical aspects to the experience. A follow-up of the patient utilizing our standard questionnaire (4) is scheduled six weeks, three months, six months and one year after the session in conjunction with interviews both with the patient and collaterals whenever possible.

In March, 1964, we (6) began a pilot project envisaging the use of LSD 25 in the treatment of chronic alcoholics who resisted the more conventional approaches to the problem, and who expressed the desire to discontinue drinking. Our purpose was to determine the effectiveness of a single LSD session with the administration of 200 mcg intravenously. Thus far, there have been 10 volunteers (one female). The patients have been of at least average IQ, not psychotic or borderline, and devoid of serious physical illnesses. In most cases, interviews were scheduled with the patients' spouses or nearest relatives to corroborate the patient's history. After approximately one year of follow-up, we find that of these

patients, 4 (1 female) are abstinent; 2 are improved; 3 are unimproved and 2 are lost to follow-up.

It is interesting that of the six patients who are abstinent and improved, four were referred to us from a religious agency. The individual history of alcoholism of these six was five to fifteen years. Follow-ups will continue on these patients for at least an additional year, with the inclusion of other subjects in order to make a more evaluative sample.

SUMMARY

Not enough is known of the neuropharmacology of the psychotomimetics to explain their behavioral effects. A "common reference" experience of 74 LSD subjects is presented to indicate their psychological effects. The intense euphoria and sense of profundity they produce make these drugs potentially powerful persuaders. Individuals, while under the influence of the drugs, appear to us to be more suggestible, and to have increased *impressionableness* to external and internal stimuli. Similarities in the responses to LSD, the placebo and religious conversions are presented. Consideration is given to the view that although the psychotomimetics have potent effects, they may act mainly as "super placebos." One area for possible profitable inquiry is the study of psychological factors ("sets," expectancies, suggestions, and others) leading to favorable and unfavorable results. A project is underway to evaluate the relationship—if any—to the expectancies of the alcoholic patient regarding the nature of the experience; the LSD experience itself; and the potentiality for change after the experience is outlined. A 355-item card sort is used to determine expectancies and experience.

Card Sort Instructions

The cards will be sorted into seven piles according to the following scales:

Pile 1 "It is very much the opposite of the experience."

Pile 2 "It is quite unlike the experience."

Pile 3 "It does not apply to the experience. In fact it is unlike the experience."

Pile 4 "It is neither like nor unlike the experience."

Pile 5 "This describes the experience a little bit."

Pile 6 "This describes the experience quite a bit."

Pile 7 "This is very much like the experience."

III

PSYCHOLYTIC THERAPY

Theoretical Aspects of LSD Therapy

Dr. John Buckman, M.R.C.S., L.R.C.P., D.P.M. *

INTRODUCTION

It is the purpose of this paper to consider the use of LSD 25 as an adjunct to analytic forms of psychotherapy. What is the curative process in psychotherapy could probably form the basis of another conference. Even the concept of psychotherapy itself proposes different images in people's minds according to their background, education, and particular persuasion. Different dictionaries are also not very helpful, giving such definitions of psychotherapy as "treatment of mental disease," "treatment of the mind," "treatment by suggestion," "treatment by physicians practicing psychological medicine." It may be true to say that all life and all encounter with other human beings is psychotherapy, the relevant question, however, being what is good and what is bad psychotherapy.

Psychotherapy with or without drugs has been practiced throughout man's recorded history. Much of it was aimed at achieving visionary states or the removal of symptoms by suggestion. Katz (9) describes how two thousand years ago the Aryans in Central Asia used to eat a weed which brought on a visionary state of mind. After they conquered India and had left behind the source of the weed, they devised a form of psychological and physical exercise (Yoga) which produced psychic experiences, not unlike those produced by the ingestion of herbs, cacti, mushrooms, coca, opium, hashish and, more recently, LSD 25, psilocybin and mescaline.

The discovery of LSD 25 in 1943, by Hoffman, began a new and exciting era of psychotherapy. Hoffman experienced hallucinations and other perceptual changes following accidental ingestion of LSD 25. Since then, over 2,000 publications have appeared in the scientific press connected in one way or another with LSD 25. Bradley and Elkis (4), Pur-Pura (14), Marrazzi (12), Smythies (18), Cerletti (5), Axelrod (2), Cohen (6), have contributed toward the understanding of the neuro-Pharmacological and psychopharmacological action of the drug. Sandison (15), Cohen & Eisner (7), Martin (13), Bierer and Buckman (3), Savage(16), Lint and Buckman (11), Abramson (1), have written about

* Assistant Psychiatrist, Marlborough Day Hospital, London; now Assistant Professor of Psychiatry, University of Virginia, Charlottesville.

the therapeutic use of the drug, and Schmiege (17) has summarized the broad group of these methods. Hoffer and Osmond (8) have added greatly to our knowledge of the nature and specific application of LSD 25. Leuner (10) has written a comprehensive survey of the experimental psychosis, and Unger (19) has written about personality changes.

The use of hallucinogenic drugs has come under much criticism following an initial enthusiasm. The criticisms included these: insufficient data about the safety of the drugs and inadequate follow-up of cases; the drug was too freely available to untrained people and could precipitate a profound, lasting mental illness, and suicide. Other criticisms were levelled on religious grounds, especially against people who say the use of LSD 25 is "instant mysticism," "instant grace," "instant salvation," "chemical religion." Some psychiatrists criticize hallucinogens on the ground that there is too much danger of self-deception, indoctrination and countertransference. They say that material produced by the patient is never spontaneous, that integration is impossible, and that the degree of regression and delayed disintegration prolongs the period of psychotherapy rather than shortens it.

In Great Britain and on the continent of Europe, the majority of people who were using LSD 25 eight years ago are still using it, but perhaps with modified expectations. At present the body of informed psychiatric opinion has probably settled down to a middle of the road attitude, allowing for the fact that there are undoubtedly some workers with LSD 25 who will be particularly successful with some diagnostic categories, while others remain completely pessimistic. There exist, broadly speaking, three approaches to the use of LSD 25. First, there is the use of the drug on occasions only, as an adjunct to analysis. The drug is given only after a considerable period of psychotherapy, when the patient is beyond the stage of insisting on a magical and quick cure, and after he has begun to be able to tolerate a considerable degree of frustration or anxiety. The analyst is present during a large part of the session, using a short period for direct interpretation. The time of the next session is judged individually, so that the next dose of LSD 25 is administered when the preceding material has been worked through and integrated. Secondly, some psychiatrists use the material obtained under LSD 25 as the only relevant material to work through in psychotherapy, ignoring the analysis of the transference. Thirdly, the drug experience itself is taken as a curative force through transcendental experience, religious ecstasy or interpersonal acting out.

The Rationale of LSD 25 Therapy

Once we state that we are practicing an insight-giving form of psychotherapy, we are faced with certain inescapable facts.

1. We recognize the existence of an unconscious mind, which is composed of inherited, archaic symbols, as well as repressed material acquired in the patient's own life-span.

2. We believe that we can gain access to the unconscious by means of free association, hypnosis, or drug-induced states.

3. We believe that neurotic illness is largely the result of unresolved conflicts, superimposed on certain genetic factors or predispositions.

4. We believe that because man is the product of some 500 million years of evolution, so his neurotic manifestations have a basis in the maladjustment to his external and internal environment. Thus we can see the relationship between the severity of the symptoms, and the importance of biological drives which are being frustrated in the process of civilization.

5. We believe that man, by virtue of being human, is aware of his own existence and thus afraid of his own non-existence; that this basic existential anxiety should never be underestimated in determining psychopathology, and in planning the treatment.

6. We believe that although transference is taken for granted in any psychotherapeutic relationship, many of us are not sufficiently aware of countertransference. Thus it is essential for the psychotherapist to undergo personal analysis, or he will become an unwilling and quite impotent partner in the patient's self-destructive wishes, and thus unconsciously conspire with the patient to perpetuate the patient's illness.

7. We believe that the LSD experience is unique, thus making it necessary for the therapist to take the drug himself, so that he may be, if only in a small measure, able to understand what the patient is talking about.

The above points may sound too much like a declaration of human rights, but it is important for all psychotherapists to realize the limitations of any form of treatment. It is important to examine and re-examine one's motives and one's reaction to any encounter, because every patient provides for us a new and unique human situation. At the beginning of treatment we would do well to ask ourselves the questions: "What is the nature of the contract?" "What is this particular patient asking, and how do I see my own function?" We always have to consider the means by which the patient has come to us for treatment. Has he come as the result of some external pressure? To what extent are his demands realistic, and to what extent is he searching for a magic wand? To what extent are we using LSD as a method of self-deception, to make us think that we can in fact work miracles? To what extent are we using LSD to placate our own conscience, and to perpetuate our belief that without the drug we are really impotent as therapists?

As the LSD 25, by producing cerebral disfunction, forces the patient to experience a feeling of disintegration, it enables him to experience the primary and basic existential anxiety about not being, about nothingness, and the inability to tolerate this. This feeling of disintegration is even more basic to the psychopathology of the patient, because it reproduces not only a specific anxiety or depression associated with a threat, but convinces him that the only logical action is suicide, as life never had nor

will have any meaning. To relive such a feeling in an atmosphere of support and understanding may have lasting benefit for the patient; he may be able for the first time to be convinced of some inner strength, some willingness and capacity to live on, and to face and to resolve lesser conflicts without escaping into symptom formation.

Action of LSD 25

The drug is related to serotonin, adrenalin and noradrenaline, and thus produces specific alterations in conduction across the synapses in the central nervous system. The nature of the disturbance depends on the type of the synapse. Axosomatic synapses involved in specific and primitive pathways, such as visual and auditory, are facilitated. Axodendritic synapses involved with body image, maintenance of ego-identity and the defensive mechanism against anxiety are inhibited. According to Cohen (6) LSD 25, by inhibiting the inhibitor system, acts as a primitivizing agent. The loss of ego-boundaries and the breakdown of ego defenses give rise to depersonalization, derealization, oceanic feelings, with transcendental or mystical experiences. There may be a return to an earlier developmental ego-less relationship with environment and a return to prelogical state, similar to the Freudian primary process. The disruption of the normal coding system interferes with conditions and learned behavior, and assists in the emergence of primitive thinking and apparent re-living of an instant in time, not unlike the experiences produced by electrical stimulation of parts of the temporal lobes.

The fascinating thing about the human brain is not what it perceives but what it is able to exclude, to code, correlate and store, so that the individual is able to respond to stimuli later, to postpone gratification and to act consistently with previous experience. The primitive organism, like the new-born infant, or the savage, responds almost automatically and reflexly to stimuli. The primitive parts of the brain concerned with receiving sensations from the outer world and with autonomic response are the first to appear. The overgrowth of the cerebral hemispheres (with the association areas, and inhibitory areas) serve to produce a more mature organism, still able to perceive a great amount of incoming data, but, for more realistic adaptation, able to store the information and act accordingly, either immediately or after an interval. It is this balance between the input and output that is disturbed by hallucinogens, fever, degeneration, and injury to the brain. With suitable doses of LSD, the person can retain sufficient insight into the experience to be able to observe his inner distinctive responses, and his acquired and more socially accepted responses. Thus, he may see the basis for some of his conflicts.

Selection of Patients

The following were considered favorable criteria:

1. Good unconscious motivation.
2. Adequate ego-integration, boundaries and defenses.
3. Adequate perception of reality.

4. Good intelligence.
5. Capacity to tolerate anxiety, frustration and depression.
6. Reasonable emotional control.
7. An age range of about 15 to 50.

The following were considered unfavorable indications:

1. Poor unconscious motivation.
2. Past or present psychosis.
3. Gross hysteria, especially conversion hysteria.
4. Poor level of intelligence.
5. Consistent failure to make any reasonable adjustment.
6. A very deprived infancy.
7. Severe physical disease.

Other factors to be considered were:

1. The capacity of the therapist to withstand and interpret the strong transference situation.
2. Whether the patient has a reasonably mature spouse.
3. Whether the patient lives a long distance from the hospital or clinic, which might prevent adequate supervision and psychotherapy between sessions.
4. Whether the patient lives alone or with a family.
5. What measure of improvement could be hoped for.

The above points were drawn up as a guide some eight years ago, when planning to treat patients with LSD on an out-patient basis. Different therapists saw the drug as fulfilling different functions. Some wanted to use it in order to replace analysis. Others wanted to use it to speed up analysis. Many considered it a good method of treating fairly well integrated neurotics, a shortened method, which would leave the patient still able to continue normally in his employment. Other therapists saw the drug as a last resort to be used on patients who were inaccessible to ordinary methods of psychotherapy. In view of the effects of LSD on normal volunteers, many reservations were necessary when planning out-patient treatment; one had to exclude patients who showed signs of undue disorganization. We were tempted to exclude severely disturbed, potentially suicidal patients, and those who were unable to gain insight, or were unlikely to improve. As the number of reported treated cases was still small, and the atmosphere not altogether friendly towards LSD, one was perhaps unduly cautious about causing unfavorable publicity. Schizophrenics were excluded on the then assumption that they were not susceptible to psychotherapy; gross hysterics were excluded for fear of precipitating psychosis and suicidal attempts; severely disturbed psychopaths were excluded because of their inability to tolerate any deep emotion, and their tendency to act out. In the majority of cases a battery of projective tests were used.

Routine of Treatment

It was thought advisable to have the patient in psychotherapy for some time before commencing LSD, so that both he and the therapist might have some idea of the emotional problems involved. An attempt was made to help the patient gain some realistic idea about the expectations of results of treatment.

All patients were treated in bed in single rooms. The rooms were quiet and darkened, but not blacked out, and a bell was installed beside each bed so the patient could summon the therapist or nurse. Three or four patients were treated at the same time, with one therapist and two nurses available. Those who were working were treated at night, the session beginning about 6 P.M. with an intramuscular injection of LSD. The starting dose was usually between 50 and 100 mcg, although in some cases we started as low as 20, or as high as 200. It was found that hysterics reacted to a minute dose, while obsessional personalities needed much more, and schizophrenics often even greater doses, to produce any reaction at all. The session lasted four to five hours, the maximum psychological experience being during the third hour. In was terminated by 50 mgm of chlorpromazine, by mouth, and those patients spending the night in the hospital were also given three to six grains sodium amytal to help them sleep. They left the next morning in time for work. Patients treated during the day would begin at 9 A.M. and finish their session about 2 P.M. They would leave the Clinic, accompanied, about 6 P.M. Often it was found helpful to give Ritalin, intramuscularly or intravenously, once or twice during the session in doses from 5 to 40 mg. This often reduced anxiety and increased the fantasy content of the experience; but it sometimes tended to produce some degree of addiction, depression following euphoria, and paranoid reactions.

The Set and the Setting

Preparation of the patient for the LSD treatment was of utmost importance, many patients having read a lot of nonsense about it. Many had made unsuccessful attempts at other forms of treatment and saw the LSD experience as a last chance. How one handles the first interview may also be crucially important in forming a realistic contract between the patient and the psychotherapist. Our practice is to explain that we view LSD only as an aid to a form of treatment, the purpose of which is the greater understanding and freeing of the patient's personality. We see it as a journey to be undertaken by the patient and the therapist together. The patient is told that he will have many varied and remarkable experiences, some pleasant, some unpleasant. He is told that because he will have the therapist's support and understanding, he will be able to tolerate all of these, and emerge from them a richer person, better able to deal with the real frustrations of everyday life. The patient is told that the LSD experience in itself is not necessarily the curative process, and that much of the working through and integration has to be done in everyday living, and decision making.

All material that the patient produces during the LSD intoxication itself, as well as his reaction to the treatment situation, can be used for basis of interpretation of the patient's transference, his expectations, and his dependency needs. All treatment produces regression in the patient; obviously, methods which necessitate the patient's lying down further increase the patient's regression. This is enormously increased by a drug like LSD which acts by disorganizing the patient's perception. The ritual of the treatment itself, the room, the bed, the people in attendance, become of great significance to the patient. With the mounting of anxiety which is inseparable from this form of treatment, there is often an increase in obsessional insistence about familiar techniques being used each time. At the same time the patient is very susceptible to the mood and tone of voice of the therapist and nurse, and to the presence of other people in the treatment unit.

Physical Aids to Treatment

A number of things have been found helpful in stimulating fantasy formation; these include music, voices, photographs, pictures, and other visual aids. At other times one may use ear plugs and face masks to exclude much of the external sensory stimulation. Babies' pacifiers, bottles, dolls, articles of clothing and mirrors, have often been found helpful to reproduce or enhance a memory or fantasy from childhood. Some patients like to be able to write, dictate, or draw, in order to make their experience more tangible. At other times they may be encouraged to do nothing, just experience the feeling itself and try to put it into words or pictures later. Group therapy, in conjunction with LSD 25, has not been altogether very rewarding. In some cases it promoted spontaneous expression of feeling, but most people would express the wish to retire to a room by themselves in order to "be alone with the experience."

The Role of the Therapist and Nurse

Some patients were found to profit most from LSD if they were left alone during the session, and worked through the material at a subsequent psychotherapy session. With some, the therapist would spend a part of the session in direct interpretation of verbalization experience, as soon as the transference was sufficiently evident, and the patient ready to accept the interpretation. The routine set at the first treatment was found to be very important and significant to the patient. If a patient was supported during the initial induction period, when the anxiety about what was to happen was likely to be considerable, he might gain sufficient confidence to face further sessions, without having to defend himself against overwhelming anxiety by hypochondriacal symptoms.

The use of drugs like LSD 25 increases the burden placed on the skill and resources of the therapist. He has to be able not only to interpret unconscious material, but to give sustained support to a very regressed and demanding patient. The regression produced is often prolonged and the patient becomes much more difficult at home. The therapist must re-

sist a temptation to make the patient too dependent on him. He must encourage the patient to see him routinely for psychotherapy between drug sessions, and to write up all the relevant material produced during LSD sessions. During the drug-induced session the therapist must always beware of any unintentional physical contact with the patient, as the patient's imagination and unconscious needs are grossly exaggerated during treatment and may lead to misinterpretation of frank delusions and hallucinations. All stimuli become more meaningful and the meaning is distorted by unconscious wishes and anxieties. The therapist must always try to understand his own motivation in his behavior toward the patient as the use of hallucinogens is very seductive of a countertransference and the therapist can only too easily be drawn into acting out with a patient and actually preventing the patient from gaining insight. A number of therapists have described the use of physical contact, apparently relevant to the patient's experience, and have claimed considerable success by helping the patient to relive, in an atmosphere of respect and trust, early traumatic and frustrating experiences, usually with a strong sexual connotation. At first thought, one is tempted to condemn such a method, but perhaps we have not heard enough about their actual practice, results and follow-up.

During the LSD session itself, extra demand is going to be placed upon the therapist's capabilities and resources. Sometimes the patient will be particularly insistent on having his questions answered and at other times he may lie silent, obviously in another world. In analysis, patients will often produce the sort of material they believe is expected from them. With the aid of LSD this tendency is increased. It often may be very difficult for the therapist to resist a temptation to interpret prematurely and to become fascinated by the ready response of the patient. At other times, the inexperienced therapist may be overcome by a feeling of guilt and helplessness as he sits there, unable to understand what the patient is trying to communicate to him. At such times the therapist might try to lessen his own feelings by projecting them onto the patient. The therapist's own analysis and experience can eventually lessen the frustration produced by the feeling of not knowing and not understanding.

The problem of interpretation is made more difficult by the use of LSD because one has a patient functioning, so to speak, on several levels at the same time. The presenting material may often seem a plausible reproduction of the patient's own past experiences or fantasies. At other times the patient may be preoccupied with purely physical sensations which he will insist on having translated for him in terms of his own physical evolution. Sometimes a session may be taken up by complaints levelled directly against the therapist, and an expression of hopelessness about the whole situation. Often the therapist may have grave doubts about the value of any direct interpretation made during the period of intoxication, for it is difficult to visualize how insight can be gained without the possibility of reality testing.

The choice of a suitable nurse to supervise LSD treatment is ex-

tremely important as she is bound to project unconsciously onto the patient her own problems. Ideally she should be a mature person who is either a mother, or emotionally suited to be a mother. She will soon realize that many patients under the influence of LSD, and indeed without it, are children emotionally and may behave as spoiled, hurt or naughty children might. She must not be easily shocked, or provoked into argument or interpretation; and she must be cautioned against being too permissive or seductive. She must have enough understanding of unconscious processes to realize that the patient may project, onto her, or her emotional turmoil, and she must resist the temptation to become an active partner in the patient's fantasies. Her function will be to provide all the normal nursing attention for a somewhat disturbed patient in bed; to be constantly available; and, if necessary, sit near the bed and give the support that can be provided only by human contact.

Nature of the Response

Physical signs and symptoms of LSD action can be found profusely in all parts of the body. There are both sympathetic and para-sympathetic effects produced at different times. The pupils may be dilated, there may be giddiness, headache, weakness, fatigue and tremor; the blood pressure and heart rate may be variably affected; respiration may be deeper and slower, there may be nausea and vomiting; the heat regulating center may be disturbed.

The psychological effects may begin in a few minutes after intramuscular injection, and seem to become maximal between the second and fourth hour, interestingly enough, after most of the LSD has disappeared from the brain. During the state of reverie, the patient's consciousness remains clear with occasional episodes of confusion. Judgment and memory are largely retained, while orientation in space and time are somewhat disturbed. Ideation may be accelerated or retarded, and attention and concentration reduced. Affect and associated behavior may vary from euphoria to depression, often with appropriate motor manifestations.

1. Perceptual changes and emotional responses:

Visual phenomena are most striking and occur in the greater majority of cases, the response being largely determined by the type of personality. The experience may be completely unstructured and non-specific, such as color, movement, and change in dimensions, or it may be more organized in form with geometrical figures, faces, landscapes, mosaics. There may be an identification with the experience. The hallucinated experience may have a great significance to the patient and may produce valuable material for the patient to associate to. Auditory changes vary from simple hyperacuity to actual hallucinations. Combined with visual phenomena, these may be instrumental in producing misinterpretations, illusions and delusions, often of a paranoid nature. There may be depersonalization and derealization. There is a distortion of body image and position, an im-

pression of looking at oneself from outside, or of being cut off from the rest of the world. The emotional response and periodic withdrawal give a picture varying from schizophrenia to manic-depressive psychosis.

2. *Recovery of repressed events or fantasies:*

a. Direct experience

At times the patient seems to re-live physical and emotional events from the past; these may involve one or more sensations. A patient may describe seeing or hearing some happening, or he may describe a personal experience where he re-lives in detail all its components, such as pain, pleasure, smell, taste, and other sensations, many with sexual and aggressive connotations. Often it is impossible to separate fact from fantasy. Usually it is unimportant to do so, but rather to help the patient to understand that much of what he is experiencing is an expression of his own infantile wishes and frustrations. The sexual and sado-masochistic fantasies occur with such frequency that it is easy to understand how the myth of the universal infantile reduction arose. Many patients will require a considerable amount of psychotherapy to realize that their conflicts are due to the incompatibility between their inner drives and their conscience. The vividness of the experience may often prevent the patient from gaining insight, rather than help him to do so. Thus a patient may be unable to see certain impulses as emanating from himself, but only as something that was done to him by persons in his early environment. Many people will become so preoccupied with this unconscious method of gratification that they will spend years under treatment producing lists of sexual assaults amounting to some hundreds. It would be difficult to accept these as biographical facts even in the most accident-prone.

Some patents will produce physical stigmata following an LSD experience. One of Dr. Ling's patients, after experiencing what she conceived of as being tied by her wrists, produced weals at the site of the bandage and even some days later a ganglion appeared in the same place. Another patient produced weals on her buttocks after an experience in which she was aware of being beaten. These apparently remained for a number of hours. A patient was even known to produce bruises, apparently due to a beating, on several occasions during treatment, and subsequently on an occasion when the treatment was cancelled at the last minute. In the present state of our knowledge it is difficult to account for these phenomena.

b. Symbolization

A repression, or a fantasy, may manifest itself in a symbolic form. The symbols that a patient uses are partly provided by the collective unconscious, the rest are highly personal. One has to know the patient very well over a long period of time, to attempt to interpret these symbols, but they can be used by the patient for self-interpretation and free association-

c. Stage representation

Often a patient finds it easier and less frightening to produce an experience if he imagines it acted out on a stage rather than happening to himself. On occasions he may take part in the experience, especially if it is of an ego-enhancing nature. He may enact a play in order to fulfill some of his needs and aspirations, and to placate his conscience, which accuses him of being a failure. He may conjure up a wish fulfillment dream in which he visualizes himself as a great national figure, or otherwise successful, to compensate for the drabness and poverty of his real existence. At times a patient may be guided and encouraged to wonder about his home as he remembers it from his childhood, and to recreate early and meaningful situations. He may be helped to gain insight into some of the family tensions, as well as his own frustrations and unreasonable expectations.

d. Identification with all or part of the experience

The patient may feel that he is his mother, or his father, or some other important person in his early environment. He may feel that he is part of the other person, physically and emotionally, and that there is a free communication of emotional experience between them. This is partly a wish fulfillment, and partly loss of ego-boundaries, experienced with the aid of the drug, in which the patient regresses to a time in his life when he was unable to see himself and his mother as separate beings. One patient described an experience during breast-feeding when he gradually ate his way into the mother's breast, and disappeared. Another patient experienced confusion at not knowing whether he was himself or his father, or just his father's penis.

e. Primal experiences

These are experiences of being born, or of giving birth, and are common to both men and women. In some cases one is tempted to regard them as actual memories. This may be true for women who have had children. In nulliparous women, or men, it is difficult to explain these experiences except along the lines of wish fulfillment or rebirth. Many of these phenomena may be accounted for by the following: first, there is a universal wish to be reborn, to start again, to react the separation in the belief that the pain would be lessened, and to return to the place where one was more secure; second, perceptual disturbances, resulting in the feeling of being very small, are easily transmitted into a conviction of being an infant; third, the fantasy element of the experience is illustrated by the fact that some women who never have been pregnant experience not only child-birth, but abortion. Some patients have felt as if they were watching their own birth from outside their bodies.

f. Transcendental experiences

These include a number of not easily explainable experiences, such as floating in space, being in the presence of God, being at peace with

everybody, being spiritually re-born. Many therapists believe that a transcendental experience—a feeling that it is a good world and one is part of it—is a curative experience in itself. They also believe that such an experience early in the treatment is a good prognostic sign. Others see it as just a sign of disappearance of ego-boundaries, an escape experience, especially in the dependent individual.

The Reason for Using LSD

Many seemingly sincere people have suggested (on the basis of questionable statistical procedures) that no one method of treating mental illness is better than any other. They have further suggested that no method gets better results than spontaneous recovery. At present the use of hallucinogens in the treatment of mental illness is being criticized, if not directly advised against, by the majority of psychiatric text books, and the teaching in medical schools. Reports of treatments are criticized on the grounds that no sufficient basic research has been done, that the number of cases is too few, and the follow-ups too short. Diagnostic labels are too vague. Some of these criticisms can be answered, others cannot. Psychiatry is not an exact science, although it largely depends on some exact sciences for its foundation. It will always, however, insist on the validity of some subjective experience. Workers in this field could add to the validity of this form of treatment if they attempted to define more clearly their expectations and their methods of assessing results.

It is important when considering the usefulness of any form of treatment to ask the following questions:

What does this method offer that other methods do not?

What is the nature of the transaction between the therapist and the patient?

What expectations are entertained by the therapist and patient?

How does the method of treatment fit in with our concept of the causation, the purpose, and the nature of the illness that is being treated?

Mindful of the physical and psychological effects of LSD 25, and our duty not to make our patients unnecessarily worse, what, we ask, are the particular actions of LSD that might prove useful in psychotherapy?

Consciousness is maintained

A patient undergoing treatment with LSD remains conscious all the time and able to record his experience, during the session, or afterwards, for use in psychotherapy. In this way the patient need not see a method of indoctrination, and need not give himself up to an omnipotent therapist. He can see that he retains some control of himself and his experience, and can discuss the meaning of it.

Resistance is overcome

We must never lose sight of the fact that LSD is a powerful tool in overcoming the patient's resistance. The resistance and the patient's defenses serve a definite purpose in preserving the integrity of the person-

ality, such as it is. Thus the therapeutic setting, the relationship between therapist and patient, largely dictate the pace. With the administration of a drug like LSD there is danger of flooding the ego with unacceptable unconscious material, which may be disastrous.

Regression is speeded up

All treatment is associated with regression. Methods of psychotherapy which require the patient to lie down are more regressive than those in which he can sit up. Methods which necessitate treatment in bed are even more regressive. Through its pharmacological action, LSD produces regression which is to some extent maintained in the period between treatments, and which is often actually fortified by the patient's physical experience of being an infant. Regression is one of the most powerful and most helpful tools we have in psychotherapy, but at the same time it has to be recognized and coped with competently lest it should become irreversible. This can be avoided by judicious dosage, spacing of treatments, support and interpretation.

Transference is intensified

This applies to both positive and negative transference. Because of its intensity one has to be able to recognize especially the existence of countertransference. A method of treatment which allows the patient to become an infant, to abreact in the presence or by permission of the therapist, increases the transference and also vastly speeds up its formation, so that it may be recognized in its full strength at first session.

Recall is facilitated

Patients undergoing LSD treatment recall experiences which are obviously formed in their childhood. Some of them may be actual happenings, some symbolic, and some fantasies. The exact neuropharmacological methods by which this is done are not fully understood. The experiences vary from patient to patient, and also in the same patient on different occasions. Some of them need no interpretation. Some need to be repeated on numerous occasions to be fully understood, and to be worked through subsequently in psychotherapy, and integrated. All of them can be used to increase the patient's self-awareness.

Abreaction is promoted

In most cases mere abreaction is of no lasting therapeutic value. But abreactions do occur as a part of the LSD experience, and are often valuable in releasing pent-up emotions. One has to be cautious because abreactions under LSD, especially if used with stimulants, may be severe in patients whose capacity for self-control is already not very strong. The converse danger also exists. That is, that the passive-aggressive, frightened individual may be overwhelmed by the unconscious need to "explode" and his inability to show his feelings. There may be a danger of accumulated "over-stimulation without release."

Gain of insight may be assisted

Insight gained is not necessarily insight retained. We see, therefore, the necessity for repeating the same experience on numerous occasions, before it becomes meaningful and integrated. Many experiences are a defense and have to be interpreted. The patient may be assisted to see his illness and his symptoms as part of himself. He can be helped to understand why he has found it necessary to respond to his inner and outer environment in a certain way, and why he has insisted on carrying his childish reactions into adult life. Neuroses have very aptly been called "out-of-date behavior." In the process of treatment the patient must be disabused of his belief that his symptoms are meaningless and useless. He must be shown how, in fact, he refuses to give up his disability.

Capacity for introspection is increased

Like all the previous actions of LSD this can be used by the patient for positive or negative ends. The patient undergoing LSD treatment will necessarily tend to be more preoccupied with himself and indeed the capacity to do so is necessary in treatment, but he must be encouraged to lead, as far as possible, a normal and full life, to allow for reality testing.

Panacea of self-deception

Over twenty years have elapsed since the discovery of LSD 25. Over 2,000 publications have appeared in the scientific press, concerning the treatment of thirty to forty thousand patients. Some of the early reports were so unreservedly enthusiastic and so wild in their claims of success, that they succeeded in antagonizing much of the informed psychiatric opinion. Many therapists were outraged because of this threat to their omnipotence. Many were justifiably concerned about the irresponsible use of a powerful drug on unsuspecting patients or volunteers. As a reaction to the early reports that the answer to the problem of mental illness was here, at last, there began to appear publications stressing mostly the dangers of suicide and psychosis, and accusing those who were using LSD of charlatanry and self-deception.

Our observations and impressions are based on the treatment with LSD of some 350 out-patients over the past seven years. Some have had only one dose of the drug in the course of treatment, others have had up to 120. When setting up original criteria for acceptance, only about eight to ten percent of the average psychiatric out-patients were considered suitable for this form of treatment. Abandoning original limitations, all diagnostic categories were given the drug, sometimes as the last resort. It became more and more obvious that the important factors were the sustained therapeutic relationship between patient and therapist, and the integration of the material produced, as well as the watchfulness for warning signs which every patient produces at the threat of the emergence of overwhelming anxiety. A number of schizophrenics were given LSD both in individual and group setting. Initial results were encouraging inasmuch

as there was increased socialization but subsequently there was a return to the isolated way of life. Some schizoid personalities profited from a single dose of LSD, which apparently gave them sufficient material for constructive psychotherapy. The gross hysterics, who were probably borderline psychotics, have confirmed the early assumption that they would be unsuited to this form of treatment. They tended to form transferences which neither they nor the therapist could utilize, and subsequently they would resort to paranoid reactions and impulsive behavior. The aggressive psychopath proved unsuited for out-patient administration of LSD, although some workers have been successful if LSD was used sparingly, as a part of prolonged and sustained analytical relationship. The inadequate psychopath formed a very dependent and demanding transference, and was unable to tolerate any degree of stress, anxiety or depression. He tended to fall back on very primitive defenses; some resulted in drug or alcohol addiction. Many of the obsessionals who were unable to profit from ordinary psychotherapy benefited in a minor way from LSD. One or two treatments, at a period when they seemed to block in analysis, were found helpful, while repeated doses of LSD, without gain of insight, tended to increase the obsessive rituals or provoke escape into hypochondriasis.

Cohen's review of the dangers and complications have confirmed the writer's impressions. Many wild claims of instant cure have not been substantiated, but neither have the many expected lasting psychotic episodes or suicides occurred. Diagnostic categories are seen now as less important than the unconscious motivation, the capacity to gain insight and the ability to tolerate stress and depression. The ability to work through a depressive phase was constantly an encouraging feature. Many patients took a long time until they were able to realize that much of the LSD experience was of great importance. Without words the patient had not really committed himself and had not begun to separate reality from fantasy. Without interpretation it is difficult to determine the fantasy and to help the patient to take a more realistic view of the world and of himself. Some writers have claimed successful results through achieving of transcendental experiences. It remains to be seen whether improvement can be maintained without a change in personality and whether a change in personality can come about without insight.

DISCUSSION

Dr. ***Balestrieri:*** In your paper, you say that in some cases of schizophrenia the LSD did not produce any reaction at all. Would you infer some similarity between LSD and schizophrenia?

Dr. ***Buckman:*** First of all, we found that the psychological response to many cases resembles not so much schizophrenia as manic-depressive psychosis. We also found that with a number of schizophrenics we needed a very large dose of LSD just to produce some autonomic

response. Some workers have reported giving up to 2,000 mcg. I myself have never given more than 500 mcg.

Dr. Dahlberg: When you refer to schizophrenic, you mean a frankly psychotic patient. Is that true?

Dr. Buckman. Yes.

Dr. Dahlberg: Not a schizophrenic between psychotic episodes?

Dr. Buckman: They were schizophrenic patients, but they were not during a disturbed period of the illness. In other words, they were functioning as out-patient schizophrenics, but they could manage to live at home.

Dr. McGlothlin: You mentioned in your paper some problem with addiction to Ritalin when used as an adjunct to LSD. Would you comment further on this?

Dr. Buckman: Yes. We found that Ritalin or methedrine introduces a wonderful feeling of euphoria and relieves some anxiety. This is what the patient craves. Many people wait until the time they get their Ritalin, especially intravenously; they believe that this is really the beginning of the treatment. Many patients who start on LSD by itself and then have the Ritalin experience may say, "Doctor, all this until now has been a waste of time. This is really the beginning of the treatment."

We found that small doses of Ritalin help to ease some of the anxiety, but often the euphoria produced resulted in depression later. There is also a danger of addiction to any euphoriant drug.

Dr. Osmond: It seems to me that the question of anxiety usually is, "Who is anxious in this case?" Some of our extremely tough alcoholics who've succeeded in drinking themselves well on the road to death, produce in us an exaggerated sense that these unbelievably tough customers, who can handle perhaps two or three bottles of hard liquor a day, are somehow going to blow up in small pieces. This great social skill of some alcoholics, in persuading moderately naive people that something terrible will happen, is actually extremely harmful. If they're allowed to move out into soliciting one's undue anxiety and worry, this is extremely bad for them, I've found. I wonder if this is your experience?

Dr. Buckman: Yes, I certainly agree with you. The therapist is aware of the anxiety in the patient under LSD. If this evokes an undue fear response in the therapist, it will be fed back to the patient who will in turn become more anxious about himself and about the lack of security and support in the treatment situation. As we become better therapists, and better able to handle the patient's anxiety, our mere presence enables a patient to re-live some of the most traumatic experiences in an atmosphere of trust and security.

Dr. Blair: I don't think we're going to make a very good contribution if we don't really understand what we're talking about when we talk about theory. Dr. Buckman has been very specific in stating the criteria that he himself holds in using this drug; but the point is, are we to understand that this drug is only effective if we hold similar criteria? This is questionable. In the clinic where I work, Dr. Ling's

clinic, there are a number of us, I think it would be right to say, who approach the matter of these illnesses with different conceptions. Some of us are analytically trained, others are not; but I certainly question very much whether one group gets better results than another. I went to the International Congress on Psychotherapy in London last year. There were quite a large number of papers on LSD therapy. The different approaches were really quite astonishing; people seemed to claim, at any rate, that they get almost equally good results from different viewpoints. Some people, indeed, seemed to think that one would get a result, in some cases, entirely from the effect of the drug, with very little in the way of psychotherapy. When one goes to the A.P.A. meeting, one hears the enthusiasm of the behavior therapists and their claims, with much conviction, that by deconditioning and getting rid of patients' symptoms, you can get patients better, and they do not relapse, and they do not produce other symptoms! Contrary to the expectations of the analysts, who have all said that if you get rid of these symptoms, you will only produce other ones.

One just wonders where one stands, and one wonders exactly where one stands with LSD treatment. I do hope and think that this meeting is going to perform a very valuable function if it can integrate various aspects, and be honest in evaluating the various theories that actually exist at the moment. I would like in conclusion, for instance, to ask Dr. Buckman how often he gives the LSD, in what doses, whether he has combined it with Ritalin in all cases or some cases. I hope that other speakers in the future will tell us their orientation; whether they are approaching the matter with the same conceptions as Dr. Buckman, or what their conceptions are; what doses they are using, how frequently they have been using the drugs, and what their general opinion is of the effect of the drug as such.

Dr. Fremont-Smith: I'm very grateful to Dr. Blair for introducing this point of view so early in the conference. Those of you who have been over the volume of the earlier LSD conference appearing six years ago, will remember that this question came up again and again. We were then approaching the problem from a great variety of basic conceptions without stating them. Part of the confusion in the discussion resulted from this fact, that we started from entirely different bases. Now, if you look at psychotherapy in general, not LSD or not any of the drugs, just in general, you'll find that the same situation is even more widely true. I think that your hope, Dr. Blair, is premature, if I might say so. It will be many years before we can possibly accomplish the kind of integration that you speak of. However, what we can do, and I think we can do this here, is to specify quite clearly, as far as possible, the nature of the differences. You don't get integration until you know what needs to be integrated. At the present time, I don't think that in the field of psychotherapy, or in the field of LSD treatment, we know all that needs to be integrated. This is going to be an on-going problem.

Dr. Buckman: Over the last seven years of using LSD, we have made sev-

eral modifications. At present I start treatment with 20 to 100 mcg of LSD given intravenously. The hysterical personality needs very small doses, while obsessionals need very high ones. The average dose for my patients is between 75 and 150 mcg, and I have never given more than 500 mcg. Several years ago I used methedrine or Ritalin intravenously. At present the majority of my patients get LSD only. About a third of my patients get Ritalin intravenously in doses of from 5 to 20 mcg. This is given some 10 to 20 minutes after LSD and sometimes repeated after about 1½ hours. A judicious use of Ritalin may prevent cases of addiction to this drug and also eliminate some of the depressive reactions which often follow euphoria. On the average we give LSD once in two weeks. I like to see my patients for psychotherapy from one to three times in the intervening period. When we were giving LSD once or twice a week we often found the treatment was too disturbing and too exhausting for people who had to remain efficient at work. Some six years ago we ran an experimental group, who met with a psychiatrist five times a week, for five weeks. Subsequently they lived together in a patient-run hostel. All the members of the group were given LSD once a week. We found the drug helpful in most cases. Some members of the group, especially three schizophrenics, were given the drug on two occasions only. It seemed to help them to talk in the meeting. This was not done in the belief that LSD is a form of treatment for schizophrenia, but rather to show that given sufficient support and a good and sustained therapeutic relationship, the drug can be given to all diagnostic categories as an integral part of treatment.

Present State of Psycholytic Therapy and Its Possibilities

Hanscarl Leuner, M.D. *

The remarks which I would like to offer here are based on my ten years' clinical experience with psychotherapy aided by LSD and related substances. During this time, in the Psychotherapeutic Section of the Psychiatric Clinic of the University of Göttingen, Germany, more than 120 cases were carefully treated from a general psychotherapeutic and specifically depth-psychological point of view. This study was made possible by a grant from the *"Deutsche Forschungsgemeinschaft."* As this was primarily a research project, no limitation was placed on the time and medical attention necessary to obtain the maximal therapeutic success. Only under these conditions could we hope to examine the possibilities of this therapy with serious and chronic cases at the hospital. Our efforts led to the founding of a number of therapeutical centers in Europe. The first European symposium was held in 1960, in Göttingen, where the term "Psycholytic Therapy" was coined by Dr. Sandison for this form of treatment. This is the only form of therapy using hallucinogens known in Europe and practiced at the 17 centers there. In its general methodology it corresponds to the type of treatment known in the United States, as reported in papers by Cohen and Eisner, and Chandler and Hartmann. It is but recently that we have begun to take an increasing notice of "Psychedelic Therapy" described by Osmond and Hoffer; Savage and MacLean, *et al.,* Jensen and others, realizing that this, too, clearly represents a form of therapy producing positive clinical results.

To obtain clarity at this conference it is therefore best that we distinguish clearly between these two methods; that is, between psycholytic therapy on the one hand and psychedelic therapy on the other. All they have in common is the use of the same drugs. The insight I have gained into psychedelic therapy is due to the numerous American colleagues who have visited me in Göttingen, and I no longer have any doubts that this method has a definite range of successful applicability. Particularly Dr. Pahnke and Dr. Unger convinced me of the great value of a single overwhelming session with LSD, on the basis of the pilot studies which they conducted.

* Head of Psychotherapeutic Department, University of Göttingen, Göttingen, Germany.

The following chart illustrates and compares the principal characteristics of the two forms of therapy:

Psycholytic Therapy	*Psychedelic Therapy*
A. Low doses of LSD (30-200 mcg) or psilocybin (3-15 mg), producing symbolic dream images, regressions and transference phenomena.	A. High doses LSD (400-1500 mcg) leading to so-called cosmic-mystic experiences, Oneness and ecstatic joy are attained.
B. Activation and deepening of the psychoanalytic process.	B. Without foundation in the classical psychological theories. Parallels to religio-psychological experience, mystics, satori.
c. Numerous sessions required.	c. One single "overwhelming" experience is aimed at.
D. Analytic discussion of experienced material in individual and group sessions.	D. Extremely suggestive preparation and use of specific surroundings and music. No detailed discussion of experience.
E. Reality comparison, and attempt to adapt experience to every-day life.	E. Adaption to reality not desired, but rather the fixation of the psychedelic experience.
F. Goal: Cure through restructure of personality in the sense of a maturing process and loosening of infantile parental bonds, requiring several months.	F. Symptomatic cure in a change of behavior not further defined.
G. Classical indications for psychotherapy: neuroses, psychosomatic cases and further; psychopaths, sexual perverts, border-line cases. Neither alcoholism nor psychoses.	G. Alcoholism, neuroses?

Our own clinical experience is, of course, solely with psycholytic therapy. A description of our technique would only repeat what has already been reported at this conference. In all decisive points it is along the lines of Dr. Buckman, Dr. Grof and Dr. Martin, i.e. careful selection of patients,

clear determination of indications, treatment in a special therapeutic community with especially trained personnel for the sake of an optimal therapeutic environment, low dosage, maximal individual care during LSD sessions, regular group therapy and art therapy as accompaniment, discussion of the material in individual sessions with the psychiatrist, and, finally, in-between and follow-up individual analytic therapy in difficult cases.

In comparing the basic tendencies of the psycholytic technique of the authors we know, we find two principal directions:

Type A. The implicitly more scientific directed technique. It assumes a childhood psychic trauma, in the causal sense, then credits its abreaction with the success of the treatment. These therapists, therefore, tend to use higher LSD doses or supplementary Ritalin injections to increase the abreaction and to hold the sympathetic care and psychoanalytic-psychodynamic discussion to a minimum.

Type B. The principally psychological technique sees the essential moment in the interhuman relationship of the transference situation, in the form of a re-learning process aided by a new object relationship through the therapist. The entire arsenal of modern psychotherapy and psychoanalysis can be mobilized. A particular variation in which the patients are shown a definite personal devotion and a high degree of warmth and motherliness is acclaimed by a certain group of physicians.

It seems that the personality of the particular therapist, as well as his training, leads him to prefer a certain sort of treatment. A motherly-supportive procedure is entirely in accord with the personality of a lady like Dr. Martin, while male therapists like Chandler and Hartman or Cohen, as well as ourselves, stress the importance of re-suffering and re-living frustrated regressions.

Abreaction is by no means considered to be the sole effective therapeutic factor in psycholysis by most authors in the field today. The activation of transference by the analysis of the *hic et nunc,* the relaxation of defense mechanisms and the gaining of true insight into neurotic symptom formation should not be overlooked in this multidimensional process. I must return to these points later.

A comparison of the success of Type A and Type B therapies yields certain differences that definitely correspond to clinical expectations. Even denying the slightest psychotherapeutic care of the patient beyond the absolute minimum necessity, good results can be attained in individual cases. The existence of helpful contacts to the surroundings, not officially registered, might have some weight. But, a statistical comparison does seem to indicate a significant difference, insofar as such cases are at all prone to comparison.

Statistic A:

Follow-up investigation by Vangaard, Copenhagen, of 22 cases treated at Powick Hospital, England. The cases were not particularly chosen and were all out-patients.

		22 cases from Powick Hospital; follow-up by Vangaard:
		5 very much improved
		1 somewhat improved
		13 unimproved
		3 slightly improved, not due to LSD
Total	22	6/16—27% improved
		3 developed schizophrenia

Statistic B:

Follow-up study of all cases of completed psycholytic treatment by us in the psychotherapeutic section of the Psychiatric Hospital of the University of Göttingen, during a period of 8 years. This study was carried out by Mascher in connection with an independent rating team.

Diagnostic Groups	Recovered Able to work	Greatly improved	Moderately or not improved Unable to work		Total	Recovered; greatly improved	
1. Character neuroses; psychopathy	1	14	3	2	20	15	
2. Depressive reaction	2	6	1	2	11	8	
3. Anxiety and heart-neurosis; phobia	2	10	3	-	15	12	50 : 38 76%
4. Conversion-hysteria	1	2	1	-	4	3	
5. Borderline cases	3	2	1	2	8	5	
6. Perversions and sexual disturbances	3	3	2	2	10	6	
7. Obsessional neuroses		2	-	2	4	2	-
8. Alcoholism	-	1	1	2	4	1	
9. Stutter neuroses		1	2	1	4	1	-
10. Infantile personality	-	-	-	2	2	0	
Total	12	41	14	15	82	53	= 64%
	53		29				

Although the initial material for these two studies differs to an extent, the basic conditions can be considered similar: in both cases the patients were extracted from among the severest examples of chronic disorders and inability to work. The grouping of diagnoses also are similar. The difference in extent of the total material, 22 cases for A, 82 cases for B, in no way impairs the obvious statistical significance of the difference of success quotients varying from 27 percent in case A to 64 percent in case B.

Further doubts which support our position are indicated by a comparison of pathological deterioration, which occurred in the form of 3 schizophrenias from among 22 cases treated as against no such development in 82 cases.*

Such a result causes concern. It means that in the case of our 82 patients, 12 schizophrenic deteriorations would have been expected, and that continuation of such treatment would have to yield such deterioration. This comparison leaves no doubt, as we see it, that continuation of LSD treatment without application of all available modern psychotherapeutic methods, that is, without the application of all the theoretical knowledge and techniques including the requirements of human relationships in the patient-doctor pair, the patient group and the therapeutic community, must arouse concern. Since the results of Type A violate the medical axiom *"nil nocere,"* it seems hardly condonable by the success statistic, which in itself appears uneconomical for such a complicated and strenuous treatment.

We can be quite happy that this small statistic of cases by Vangaard is available to permit this comparison, so that incorrect expectations from LSD as a therapeuticum in itself can be eliminated. Dr. Sandison generally stresses the importance of therapeutic support in his papers.

If then, along with most other authors, I favor intensive psychotherapy as part of Psycholysis, the question of the time necessary for each case comes into the foreground. This will then permit the planning of special wards and the personnel required. The following table gives a survey:

Economic Aspect of Psycholytic Therapy;
based on catamneses of 82 patients treated

Average *length of treatment* (including breaks)	11.5 months
Average number of *psycholytic sessions*	26.7 per patient
Average number of *individual sessions* (1 hour)	33.2 per patient
Average number of *group sessions*	28 per patient
Effective time of treatment:	214 hours per patient
Therapist hours expended:	55.5 hours per patient

(Two auxiliary therapists—nurses—were in charge.)

Compared to what might be expected in the case of a purely psychopharmacological therapy in general psychiatry, the expenditure of 55.5 hours per patient seems considerable. This does not include the 10 hours needed, on the average, for pre-treatment and post-treatment, so that we must figure in the neighborhood of 65 therapist hours per patient. But, keeping in mind that Psycholysis is a causal therapy for most severe and previously incurable cases, to those resisting all other forms of therapy, including long years of psychoanalytic treatment, this expenditure seems slight. If we were to carefully assume that on the average our cases

* Mascher's study does not show our one temporary schizophrenic deterioration, as the patient had already improved at the time the study was made.

would have required 300 individual psychoanalytic sessions, our time expenditure is less than one fourth, completely ignoring the far greater effect. Furthermore, new indications such as sexual perversion, psychopathy and borderline cases can be treated.

In the future an attempt will be made to increase the extent of the work carried out by auxiliary personnel, so that, for example, laymen with special psychotherapeutic training will be used in the group sittings. Psycholytic therapy does permit the substitution of auxiliary therapists for the psychiatrist, working with him in a well-integrated team, in a certain range of duties. Essential possibilities for the extension of psycholysis as a clinical method stem from this fact.

A survey of the present status of general experience in the field of psycholytic therapy forces us to realize that it has matured to an extent which makes sensational new successes or great revolutionary discoveries unlikely. The pioneer stage lies behind now, and we have entered the phase of detailed technical perfection and filling-in of theoretical foundations. I do not want to go into the theoretical positions here, except perhaps to mention that not all the phenomena of psycholysis can be explained on the basis of the theory of psychoanalysis and familiar psychodynamical experience.

It is only natural that a refinement and technical-methodological improvement is called for at this stage of a new medical treatment. Examples of this process can be seen in the development, say, of heart surgery or antibiotics. In each case the first discoveries, veiled in optimism, are followed by a phase of more laborious detailed work which increases the quotient and reduces complications, as well as simplifying the technical process. We are thus led to ask the following question: Which aspects of psycholytic therapy must be examined more closely if we are to improve and perfect our methods?

I want to discuss the points which seem to be essential.

1. The duration of psycholytic treatment can be decisive for the success of the individual treatment as well as for the relapse tendency. We have measured the length of our treatments in relation to the immediate success, using the catamnestic success, 2-8 years after treatment, and the status ¼ year after it was begun.

This would suggest that the optimal length of treatment averages 38 sessions with LSD. This concurs with our clinical observations of strongest personality change around about the thirty-fifth session. An extension of the therapy to about 50 sessions in particularly severe cases seems called for, if some definite progress has been made. The absolute failure of the first 20 sessions reduces the prognosis to an extent contraindicating further work. Even the failure of the first 2-10 treatments to produce some satisfactory results indicates that expectations can be too great.

2. The careful selection of patients is a key point in improving the prognoses (where this selection by no means necessarily concurs with an optimal prognosis grouping under classical psychoanalysis). This has al-

Fig. 1. Comparative chart of the results of psycholytic treatment at the Psychiatric Hospital of the University of Göttingen. The 82 patients are divided into 5 groups, depending upon the number of psycholytic sessions (Ps) they had. The average number of these sessions as well as individual interviews (E) and group sessions (Gr) are shown. Effects of the treatment are illustrated above, on the basis of 4 indices of condition. The dotted line (. . . .) shows the condition before treatment, the broken line (.-.-.-) shows the immediate effect of the treatment and the continuous line (___) the results of the catamnestic examination 2-8 years later. Note that in the optimal treatment range the condition tends to improve after the end of treatment, while in group IV there is a strong relapse tendency.

ready been pointed out in the work at Marborough Day Hospital, by Dr. Buckman and Dr. Martin. Their selection process was limited to such patients as could be safely treated at a day hospital. It is our desire to use their outline as a basis and extend it for our in-patients.

All sides seem to agree that this selection must consider the diagnoses less, and personal traits and behavior of the patients more. Good results have been attained by totalling the various prognosis aspects to a sort of sum valuation in each individual case. The decision process of Baumeyer and Duerssen has led to success. Nevertheless, we often give individual patients a chance in the form of a trial treatment with 3-5 LSD sessions with introductory group therapy, and sometimes to our surprise find these patients reacting well to the treatment and making progress, against all expectations.

3. Additional pharmacological aids can expedite the treatment. The intravenous injection of Ritalin (1-2 ampules 20-40 mg) or amphetamine during the LSD session was, to my knowledge, introduced by Sandison and then propagated by Ling and Buckman. Spencer, using the trauma model, and Sandison, in all likelihood as well, thus try to force an abreaction or a deep regression, at the peak of the LSD sessions, or to break through strong resistance of their patients not mastered by high LSD doses. Ling and Buckman feel that Ritalin given ½ hour after LSD tends to lessen the frequently occurring anxieties. They recommend its regular use. (Other authors, Martin, Grof, and Hausner, as well as Geerd, Jorgensen, *et al.,* do not mention these drugs.) This is also recommended by the American researchers, Chandler and Hartmann, as well as Cohen and Eisner. We, ourselves, have used them for two years experimentally, and have found Ritalin and amphetamine to be useful in certain ways. I would not recommend their regular application. As is the rule with psychopharmaca, reactions vary greatly with individuals. We have tested these reactions under 420 injections of Ritalin or amphetamine and have found two respectively paradoxical effects:

a. As pointed out by Sandison and associates, an activation of the psycholytic material results in the form of a sudden intensification of already present symbolic or frustrating experiences and of a conjuring of childhood reminiscences with strong abreaction.

b. Contrarily, a previously present intense resistance of a patient, manifested by general passivity or unpleasant moodiness, can sometimes strangely be swung around. But, instead of activating the underlying material, a new resistance arises in the form of a primarily euphoric, satisfied and comfortable mood. A certain converse addictive response arises; the patients expect the injection, they even look forward to it before the beginning of the session, and enjoy this shallow bliss in place of the therapeutically necessary conflict.

This soon led us to record the subjective experiences and wish-expectations of the patients, with interesting results. The injection of Ritalin is experienced differently by the patients, depending upon the emotional tone of the phase their treatment is in. Women in the oedipal phase tend to view the injections as a sort of rape, sometimes covertly de-

siring it. Men often experience a defeat or castration, threatening them with total conquest, or eradication of their existence. But, with the homoerotic phase of the treatment, they can also experience it as a carnal sexual attack, especially when Ritalin produces the euphoria already mentioned. It then becomes easy to explain the addictive fixation of the patients.

We could hardly await an emotionally cool "technical acceptance" of the injection under the emotionally pregnant conditions as a psycholytic session. We have, therefore, taken to letting the patient associate his immediate thought before the i. v. application of Ritalin, so as to be able to adjust to the transference situation. A graph will illustrate the varying effect of Ritalin during psycholytic therapy.

The strictly discriminate use of Ritalin has proved advantageous in our work, during the ebbing intoxication, especially in the case of drugs with shorter effect such as psilocybin or CZ-74, to activate a desired second peak, and in the case of protracted resistance not responding to psychotherapeutical means. The sudden breaking of all controls can then definitely prove therapeutically valuable. We consider it necessary that during the entire new toxic effect the therapist remain in intense contact with the patient to assure him of the necessary anxiety protection. The

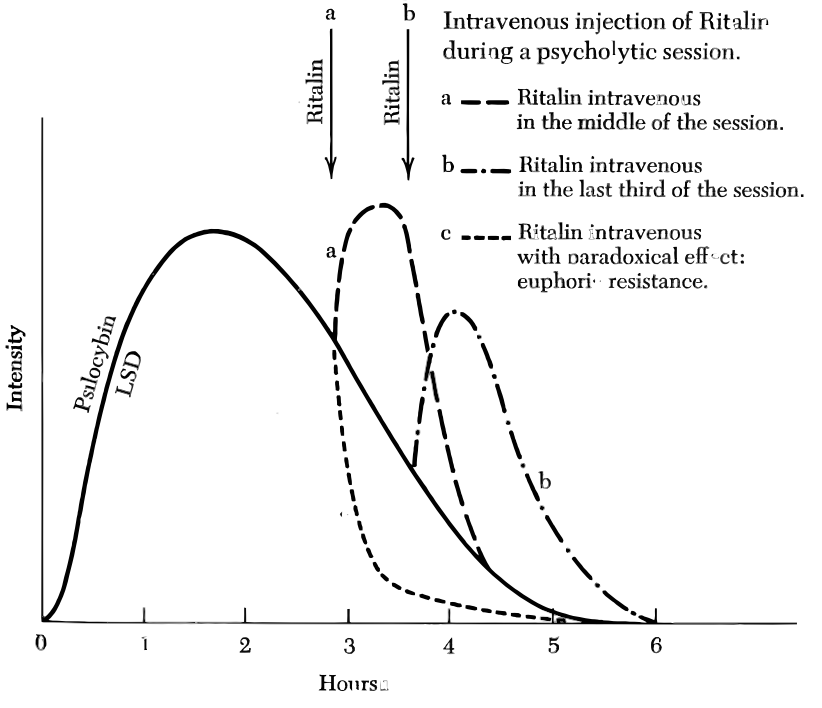


Figure 2. We show the effect of an intravenous injection of Ritalin during a Psycholytic session. The heavy line charts the normal course of the LSD reaction. Lines a and b show the peaks of the superimposed Ritalin injection. But the paradoxical effect (c) is also often observed, indicating euphoric resistance.

discrimination of such cases depends not only upon the patient, but also upon the stage of treatment.

4. The use of substances other than LSD 25: In the course of improving and perfecting psycholytic therapy, we must decide whether LSD is the only and optimal drug for the purpose. Experiments with psilocybin, as they were first carried out by Delay and then by others, suggested the incorporation of that drug into routine treatment. Psilocybin has proved very valuable to us for a number of years. For a year now we have had similar good results with the psilocybin derivative, CZ-74, (4-hydroxy-N-diethyl-tryptamine) synthesized by Sandoz in Basel. Baer and I conducted the first human experiments and found psychopathological and psycholytic effects corresponding to psilocybin, the important difference being in the extreme brevity of the intoxication. To convey an idea of the time factor, a medium strong to strong LSD injection is effective for 8-12 hours, the effect curve sinking slowly toward the end. A correspondingly strong dose of psilocybin intoxicates for 5, at the most 6 hours, with a rather steep decline of the curve at the end. The corresponding CZ-74 intoxication starts quickly, lasts 3-3½ hours, and descends briskly, where we have always assumed intramuscular application. We have tried to illustrate the comparative effects in the following graph:

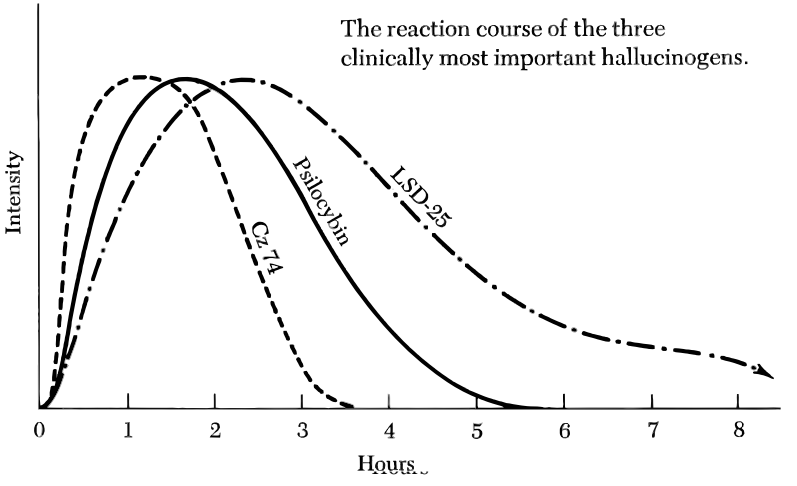


Figure 3. The approximate time element of the reactions to intramuscular injection of three psychotomimetica.

Comparative dosages for the three substances can only be approximated. We would say 100 mcg LSD corresponds to 10 mg psilocybin and 15 mg CZ-74.

As to the psychopathological effect, patients report certain subjective differences. LSD acts pitilessly, brutally, conjuring up past negative and frustrating experiences, particularly from childhood. Psilocybin is said to be gentler, milder, with contents warmer in color. Exact examination shows these reports to be vague, though. Differences in dose are attribute

to the specific drug. A change of drug after a certain habituation always seems to deepen the effect. But here the suggestive factor of taking "a new medicine" plays its part.

Thus, we now have a well-rounded repertoire of three psychotomimetic substances at our disposal, assuring us more control of the therapeutic process. CZ-74 permits, when desired, an overwhelming and intense effect under a heavy dosage. This is also advantageous in certain phases of psycholytic therapy. This effect thoroughly subsides in, at the most, 3-4 hours. In the run of our regular psycholytic treatment, we have tried 160 dosages of up to 40 mg without any pathological after-effects. Thus this drug must be considered to be particularly safe and suited for ambulant psycholytic treatment and use by psychiatrists in their practices. Psilocybin stands in the middle, while LSD is the strongest and most imposing drug, sometimes made undesirable by overtiring the patient with its slow, torturous decline, rendering him unfit for further treatment the same day. Difficulties for the therapist and auxiliary personnel also arise from sessions of 8 and more hours in the course of routine treatment. The quick descent of the psilocybin group has the further advantage, as Whitacker pointed out, of eliminating the hangover of LSD.

The short but overwhelming and ecstatic sessions with CZ-74, in high dosages within the frame of psycholytic therapy, have been particularly useful in penetrating overly rational and compulsive individuals, often leading to a quickening of the entire therapy.

5. Improvement and intensification of the psychotherapeutic measures: On the basis of ten years of psycholytic treatment, and the various experiments we have undertaken in this regard, I now would suggest the following over-all psychotherapeutic plan. The necessary economy of the psychiatrist's time must be combined with the optimal effectiveness, permitting as wide a play as possible for all potential occurrences. Psycholysis itself takes place in individual darkened rooms, but otherwise the patients are always combined in groups of four or five, forming a therapeutic community, in a sense. These form a part of the larger ward-group of about 12 patients, hospitalized either for 2-4 months, or for a day and a night regularly every week with their groups. (We call this "interval hospitalization.")

The psychotherapeutic framework of the entire treatment is formed by the sessions of these groups. Out-patients have them once or twice a week while the in-patients meet every day for 1 to 1½ hours. New admissions start by sitting in on sessions of experienced patients and are then placed in groups, as available. These groups are primarily intended to work through the psycholytic experience and expand it to the realities of every-day life. I suggest calling these groups, which accompany the patient from his admission until the final completion of our medical care, "frame-groups." The analytic investigation of erroneous, neurotic expectations, as reflected in the psycholytic material, turns up again in the groups as a model of the patient's social field, and can then be uncovered in the manifold projection onto the *hic et nunc*. This job of reality-control could hardly be adequately done in the psycholytic session itself, as we have learned.

Before the actual treatment starts, the patient is interviewed up to 5 times, a biographical anamnesis being taken with depth-psychological aspects. The patient must also prepare a detailed biographical written report, thus forcing him to give thought to his past. We know, and here I concur with Sandison and his associates entirely, that with any psychoanalytic preparation of the patient, the prognosis is better. Therefore, patients who tend strongly to repress their emotionality, and to whom depth-psychological thought is foreign ("emotional illiterates," as A. Hein calls them), are given a special introduction, with our eidetic symbol-projection technique. This can also be done in groups with music.

Once the patient has the necessary experience, in 1-3 weeks he generally urges that he "finally" be permitted to start psycholytic treatment. By then the patient has confidence in the treating psychiatrist and a positive transference has developed. Our experience shows that it makes little difference whether the treatment (into the nature of which the patient has been oriented) starts with a high dose of a psychotomimetic drug, so as to immediately break all resistance and thus hasten the start (best with the short-lived intoxicant CZ-74); or whether it starts with small, slowly increased doses, as done by Martin and Sandison *et al.,* and previously by us. Regular treatment then takes its course, with weekly or fortnightly sessions. Rigid patients start with two sessions a week. Some control is necessary to assure that the patient is not flooded by material outside the sessions, and that ego-weariness, as a result of over-intensive psycholysis, (i.e. overdose, too many sessions) does not cause him difficulty in integrating the material and resulting emotions in everyday life. When this happens, we pause for several weeks, but continue frame-group treatment or additional therapeutic sessions with particular intensity. Of course, chlorpromazine can be applied if quick sedation should become necessary for an out-patient, or an interval-hospitalization can be arranged. The possibility of a short hospitalization should always be held open in serious cases.

In the case of severe resistance, not solvable by any of the suggested means, a careful psychoanalysis of the resistance can be imposed for several weeks before the case is written off as hopeless. This has often led to the uncovering of misunderstandings, and imaginary anxieties, or of negative transference to the psychiatrist or to the nature of the therapy, followed by a successful turn of the treatment. I have also observed that breaks in the course of treatment are quite permissible, such as naturally occur due to holidays or other circumstances. The patient should be aware of this possibility.

On the day of psycholytic session, special postpsvcholytic group sessions are held, in addition to the frame-group sessions throughout the therapy. In the early afternoon, the psycholytic experiences of the morning are drawn or finger-painted during group art-therapy. A special group discussion covers these products as well as other drug experiences. The therapists prepare protocols on the following day and, depending upon the phase of treatment and where they live, patients have one to two individual sessions with the therapist to work through the material. Rare, particularly difficult cases, such as borderline or those threatening

compensation, receive more individual treatment each week, up to a half-hour daily. Only a small percentage of cases need this. The possibility in principle of these compensatory individual interviews is reassuring for both the patients and the therapist.

A remarkable point, on which we agree with most other authors, is that the final, essential improvement or "cure" often does not appear until three to six months after completion of psycholytic treatment, even when group therapy also has been broken off due to external necessity. It is important that this delay in improvement be kept in mind; psycholysis is not continued to the final "cure." It is often useful to interrupt the treatment on a trial basis, with the intention of continuing after a half a year to a year, for short psycholytic treatment, working through remaining problems and relapses. Prerequisite to this is that the patients continue to feel a certain belonging to the ward for some time, or that a loose contact is maintained by correspondence. Another reason for this prolonged contact is that patients leaving the ward with negative transference and then suffering relapse, or suddenly aware of previously unrecognized material, (say in the form of aggression), are likely to be committed elsewhere and wrongly diagnosed. Our system of treatment with frame-groups seems most suitable for all these contingencies and can best be molded to the needs of the individual without disturbing the routine basis of the entire plan of treatment.

The last point I want to make is this:

6. Further abbreviation and improvement of the treatment can be attained by a revision of the psychodynamic outline of psycholytic therapy. This does not mean that we want to change the outer organization of the treatment, but rather our inner conceptions that are necessary for the comprehension and interpretation of the manifold experiences of our patients, to aid them in gaining new standards, and new insights into the motives of their neurotic disorders.

As already indicated, the psychodynamic ideas with which most therapists operate (for few are fully trained psychoanalysts), correspond to the early phase of psychoanalysis, say about 1920, with the analysis of the id and the notion of therapeutic effect achieved simply by uncovering repressions and bringing psychic traumata to abreaction. The view which must replace this was expressed by the German psychotherapist Hau: Therapy no longer deals alone with the pursuit of the incarcerated affect, the breaking of childhood amnesia, and the loosening of fixations to infantile libidinous phases, etc., but rather with analysis of the entire Personality, of the neurotic character." Psychoanalytic as well as psycholytic practice have shown that every psychopathological syndrome involves a disorder of the ego, that is, a character disturbance. The early psychoanalytic ideas, some still in use, could grasp this view only in part, and dimly.

It would lead too far afield to go into the details of the development here. Perhaps we will be able to cover some points in the discussion.

I have tried to show where I believe psycholytic therapy has room for improvement. But before I close, I would like to make two further points.

Everyone who has worked with psycholysis for some time sees it as an excellent method. But no one will argue that it is universally indicated, and it is a matter of course that a strict selection of patients is necessary for such penetrating and far from routine methods, if the high success quotient and freedom from risk are to be upheld.

Unfortunately, these methods have gained but slight acceptance by the vast majority of psychiatrists. I need not discuss the misuse to which the substances have been put by unqualified laymen, nor the ill-advised press reports solely intended to feed the public's appetite for sensation. Cohen, and his associate Ditman, showed very well how low the relative risk of the therapy is, if it is carried out responsibly by qualified doctors. Thus, we actually are threatened less by adverse results, or severe complications, than we had to assume at the start. Our experience has shown that this risk can be reduced practically to zero in a well-institutionalized therapy, as in our clinic. This holds for the activation of depressions and schizophrenic psychoses, as well as attempted or successful suicides.

Even if we have taken all precautions during and immediately after the LSD session, we must be careful about possible characteristic *post-reactions*. I do not mean the chronic hallucinosis, as might occur after long abuse of psychotomimetic drugs, or even after overdoses or frequent sessions within psycholytic therapy (Cohen and Ditman), for these will be avoided by the experienced therapist, who would also be able to control such reactions, as a psychiatrist using the arsenal of psychopharmacology.

I am more concerned with reactions which occur at an interval of from 8 days to 3 or 4 months after a single highly-dosed session, or series of sessions, which tend to come suddenly, out of a blue sky, and cannot always be compensated by the person himself. Such reactions can have a definite psychopathologic appearance and may lead to commitment to a psychiatric hospital.

We give an example to clarify this effect: a female member of our staff, a 36-year-old doctor, experienced an LSD intoxication in which she took twice the planned dose by mistake, leading to a severe exogenous psychosis, lasting many hours. The after-effects disappeared after several days. But, six weeks later, on her way to the dentist for an extraction, she was stricken by so severe a panic anxiety that she called me up and asked me to pick her up in town and drive her home. Repetitions of such anxiety reactions followed in similar situations in the next weeks. Viewing this psychodynamically, we see that previously well-organized defense mechanisms had been loosened. The normal psychological fear before a tooth extraction activated the repressed, previously controlled, anxieties to a total reaction difficult to integrate.

Another psychopathological reaction: Two cases treated by a psychiatrist inexperienced in psycholysis showed severe catatonic agitation eight days after a session, leading to commitment and treatment for several weeks in a psychiatric institution. (The psychiatrist had urged these patients energetically, during the LSD session, to activate their infantile aggressions against the frustrating mother.)

In another case, a patient of Geerd Jorgensen committed a murder,

with a certain appearance of premeditation. She stabbed her now-hated lover with a knife. A patient of ours, with a severe anxiety neurosis, suffering from inhibited aggression, was released from the hospital for ambulant treatment after strong improvement of his condition. All treatment had been broken off against our suggestion. Four months later, an aggressive rupture took place and he bodily assaulted his parents-in-law, and was forcibly committed. Previously, he had been relatively peaceful, with a certain neurotic spite against all authority, and an aversion from his mother.

It would be difficult to claim these pathological reactions to be immediate results of an LSD effect. A close study must bring us to realize, though, that the psychic loosening effect of psychotomimetic drugs is *indirectly* an important causal factor in the formation of such reactions, in that jammed-in, inner libidinous impulses are liberated. The strongly provocative outer influences should not be forgotten. The reactions are always along the line of motivations which had manifested themselves in the therapy. Every therapist working in this field has observed such pressing tendencies and strenuously controlled impulses in his patients during the treatment and immediately thereafter. Of course, the same effects are known in analytic psychotherapy, in the case of unrestrained impulses. Nevertheless we must continue to study these postreactions of breakthrough nature, and above all keep their control in mind. Our experience indicates that they are always due to a deficiency in the analysis of the neurotic character, and often stem from the belief that abreaction is the central moment of psycholytic therapy.

The experienced therapist will have little difficulty in quietening such suspected patients with psychopharmacological means, or a short sleep-therapy. We have had particular success, especially with borderline cases and compulsion neuroses, threatened with aggressive fits, in prescribing an in-patient sleep-therapy of 3-8 days, thus liberating these patients of their breaking-through impulses, their inner unrest and their severe anxieties. Chlorpromazine is continued for 8-14 days in the sense of a control-dosage, and analysis proceeds without LSD. Similar medication has proved useful at the danger points of the therapy. Our chief interest in preventing such reactions is, of course, that of the patient, but we should not forget that psycholytic therapy itself is debited in the eyes of outsiders with such occurrences.

Asked, on the other hand, for proof of the value of psycholytic therapy, we have shown the large number of cases treated and some careful catamnestic examinations. Unfortunately, these rarely have been prepared to date, and then often not by an independent therapist as is necessary for complete objectivity. Greater research funds would be necessary for this difficult task; suitable grants are definitely needed. The material in the archives of all research workers should be evaluated together, and all concerned should agree to common evaluation criteria so that the material can be combined to a total statistic.

Independently, it is desirable that additional convincing scientific Papers be published, concerning syndromes or ailments previously un-

satisfactorily treated by standard therapy but reacting positively to psycholysis. Good examples of this sort of work are given by A. Hein in his paper on criminal psychopaths and Martin with hers on the treatment of homosexuals. We have been treating a series of schizophrenic borderline cases and paranoias, as well as a series with heart-neuroses and the effort-syndrome (neuro-circulatory asthenia). Although the prognosis had been particularly poor, with 80 percent retaining their symptoms despite therapy (Kuhlenkampff), we could attain essential improvement, or "cure," in 60 percent of our cases.

Summarizing this paper, I believe that psycholytic therapy, an essential branch of psychotherapy using psychotomimetic compounds, for methodological and clinical reasons, must be viewed as strictly separate from psychedelic therapy. It is a form of therapy of its own, based essentially on psychodynamics and advanced psychoanalysis. It is thus based on definite theoretical concepts, although these are not as yet entirely filled in. But papers published in this field show that a certain definite and clear form of therapy has crystalized. And indications are that intensive combination with psychotherapy and close interhuman communication, including group therapy, will yield yet greater fertility. The hope of a specific pharmacologically therapeutic effect of these drugs which seemed to lie at hand, led only to slight statistical success, but also to complications and pathological deteriorations.

Psycholytic therapy, carried out in the sense outlined above in more than 20 centers in various countries, has definitely shown its usefulness, and has proved preferable to other psychotherapeutic methods in its scope. It is safe, provided rare postreactions are avoided. It should be carried out strictly in clinical institutions. Sensational new discoveries are no longer to be expected, but rather a difficult detailed improvement of the treatment.

I have presented a number of empirical observations and suggestions, based on my years of practice with psycholysis as well as analogous experience of other authors, and discussed these critically, with a view toward improvement of the therapy and raising of the statistical success quotient, as well as the reduction of risks and prevention of postreactions. I have suggested that strict catamnestic examinations be carried out, if possible, on a common basis for all centers using this treatment so that an over-all statistic becomes available. Further publications on specific indications for psycholysis would be highly recommended.

Six Years' Experience with LSD Therapy

Fred W. Langner, M.D. *

This paper consists of three parts, and samples two periods covering a total of nearly six years' experience with LSD therapy. The first period, 1954-57, will be summarized from a paper I wrote in 1957. This paper was a means of taking inventory of the pros and cons for continued use of LSD therapy. This evaluation of my own impressions led to an exciting consideration, namely LSD as *modus operandi* for therapeutic self-examination in the non-psychotic.

PART ONE

My initial concern with LSD derived from the observation that the discipline of analytically-oriented psychotherapy is prohibitive for many patients because of its financial and temporal demands, and a shortage of therapists. Yet there has been no other mode of therapy adequately experiential to resolve conflicts and foster emotional growth. In the interest of determining if lysergic acid reactions as reported by Sandison (1) might offer a means of effectively telescoping analytic benefits into a short-term experience, the potentialities of these reactions were explored. During a period of more than two years (1954-57) sixty patients (representing most diagnostic labels but preponderantly schizophrenia and severe personality disorders) were observed while under the influence of lysergic acid during more than 600 episodes. For most of these patients, it was the major therapeutic approach.

In this report a general evaluation of its effectiveness will be attempted. It is accepted, *a priori,* that the evaluation is a non-controlled study and to a considerable degree subjective. The initial cases had a poor prognosis based on their chronicity and history of previous treatment failure. The encouraging results with these caused me to enlarge and continue the study.

Lysergic acid was initially defined as a toxic agent which induces a "modelpsychosis." My objections to this concept will be presented later. For the present my concept of the drug as a therapeutic agent is defined

* Director Langer Clinic, Albuquerque, New Mexico.

as follows: Lysergic acid is an agent which diminishes effective compartmentalization within the mind, attenuates and often shatters the multiple defensive adaptations which underlie neurotic behavior, permits in many patients heavily repressed experiences to be brought rapidly into consciousness and, in general, catalyzes the revocation and comprehension of the traumatic roots of emotional illness. I have come to think of the drug as a mental and emotional catalyst and an ego-enhancing agent. It is from this standpoint that the drug is discussed in this paper.

Method of LSD Therapy

Each patient covered in this report of 1954-57 was handled, as regards his LSD therapy, in essentially the same manner. Ninety to one hundred and twenty minutes after a normal breakfast, the patient was given an oral dose of LSD in a glass of water. Dosages varied from 0.4 to 3.0 cc (40 to 300 mcg). An attendant, functioning in an entirely permissive manner and with duties chiefly as observer and stenographer, was with the patient continuously. The doctor was in and out intermittently but tried to be present whenever the assisting therapist thought the situation was noteworthy. A record of the patient's verbalizations, behavior and affect was kept in as full detail as possible. The duration of each LSD episode averaged four to six hours. When it was deemed necessary (to preserve the patient from too threatening disorganization), the reaction was ameliorated or terminated with intravenous barbiturate or Frenquel, or, rarely, both. Moderate oral sedation and Frenquel were used routinely for a while to taper the reactions, but were found to be unnecessary as a routine procedure. In some episodes, intravenous methedrine or methedrine-barbiturate were used to accelerate or modify existing responses.

Rate of Catharsis

Noteworthy is the appearance in some cases, during the first few episodes, of the symbolic or literal expression of many of the dynamic factors involved in the illness. These cases illustrate how the disinhibiting aspect of the drug may permit a frontal attack on problems, even after formal interviews had brought comparatively unrewarding results.

A patient who was treated unsuccessfully elsewhere with electroshock therapy for a severe neurotic depression was admitted to the sanatorium after a recurrence of a suicidal attempt. He was uncommunicative for the first week. During the second week, he was verbalizing moderately freely, but during his fourth formal interview, he became resistant to the conference procedure, protesting that the doctor's concern with the past was purposeless as it was the present he had to face when he went home. This resistance followed the first admission of mutual masturbation as a boy and his continued need for self-masturbation in his present marriage. The next day he was bed-ridden, hysterically withdrawn, and hinting at suicide. After ten days of highly regressive and negative behavior, he reestablished contact and within the following week was able to reveal current mutual masturbation with an older man and his feeling of irrita-

tion with his marital heterosexual relationship. Thus, in over a month's relationship and hospitalization, little had been revealed verbally beyond an expression of the present focal symptom of overt homosexuality.

At this point, LSD was introduced. The initial dose (100 mcg, to which 100 mcg were added after one hour) induced relatively little response. Three days later, in response to 300 mcg, the following material was freely verbalized.

1. Feelings of rejection by father, and its equivalence to castration.
2. Ambivalence toward the father, including overt death wishes,
3. Feelings toward oldest brother, similar to, but not as acute as, those involving father.
4. Unsuccessful attempt to compete family-wise with youngest sister.
5. Awareness of pathologic dependence on father and structuring of this relationship as a scaffolding for projection.

During the next episode, two days later, the patient experienced being incarcerated and crushed in the womb. He reacted as if the experience were intolerably painful, physically and emotionally. To alleviate the distress without sacrificing alertness, a combination of barbiturate-methamphetamine was given intravenously. Shortly thereafter the following conversation was recorded:

Doctor: Why do you think you seemed to stop in your mother's womb?
Patient: My father.... You (the doctor) take your children to the beach, hikes, picnics and to things....
Doctor: Are you out of the womb yet?
Patient: No, Siree.
Doctor: Why?
Patient: I don't know, but I believe that people told me that I should not have been born.
Doctor: What do you want most?
Patient: To be born physically; to be wanted; to be loved.
Doctor: What do you expect from your father and mother?
Patient: My father wouldn't do the right thing by me. He shouldn't have showed my brothers all his love and attention.
Doctor: What does being born represent to you?
Patient: You mean at birth?
Doctor: Yes.
Patient: They wanted so much for me to be a baby girl at birth. And I've tried so hard. I've washed dishes, cleaned the house. I've been a girl so long that there's been nothing left to wish.
Doctor: Have you ever wished that you didn't have the genital organs of a male?
Patient: Yes—even to the point of cutting them off if it wasn't for the pain....

Following this, in the doctor's absence, the patient demanded that the doctor undertake to pull him out of the womb since he could not get out by himself. Then he revealed that the feeling of being crushed was not from the feeling of being delivered but was a feeling of being crushed by

his father while still in the womb and that he hated him for having sex relations with his mother while he was in there. Later in the episode, this recollection from childhood occurred:

> "Patient remembered that from the first time he ever heard a chicken in the shell he couldn't resist the temptation to tear the shell open and let the chicken out. He says that he was afraid that when the hen sat on the eggs she would mash it to death before the baby chick could get out of the shell by itself."

Four days later, the patient experienced his fourth LSD episode. He found himself back in the womb with his father's penis painfully jabbing his right eye—the same area referred to in his pre-LSD interviews as the site of frequent, severe headaches when he fears he has lost friends. During this LSD episode, the patient spontaneously evolved his sexual development in reference to his father as follows: watching his father urinate stimulated the sex urge in him. This was before he started masturbating. During puberty, he started having ejaculations and he wanted desperately to talk to his father about his desire to have relations with him. If he had mentioned this, his father would have beaten him brutally. Sexual rejection by father was now his conscious reason for hatred toward his father and his mixed sexual feelings later in life. Following this, the patient experienced a severe pressure on his right eye and reported seeing his father's penis. In response to the doctor's question, he stated that to keep the pain from his eye he could have directed the penis into his mouth. He doesn't want that now, although he did then.

This portrayal of an umbilical union with both parents, with its resulting psychosexual confusion might be readily delineated with psychological testing. It would be rare indeed that clinical interviews could reveal such basic dynamics so readily except through the therapist's intuition. It is unlikely that such meanings could purposefully be revealed to the patient so quickly. It is almost certain that the patient could not be induced to experience them in so undeniable a manner in so short a period of time.

In several cases, before and after the LSD episodes, interviews under narcosis gave us an opportunity to compare degree and character of catharsis under these two influences. It was usually noted that the rate of verbalization in these cases and the unloading of feelings near the surface were greater and more rapid under narcosis, but the defense mechanisms were not shattered as with LSD. Hence, while the ventilation was usually found more continuous under sodium amytal-methedrine, under the disinhibiting influence of LSD the catharsis was more significantly productive, more trauma-focused than under narcosis and the relief to the patient more reconstructive in its effect.

Intensity of Abreaction

The abreactions may be literal or symbolic; they may borrow from environment stimuli for a framework, they may transmute persons in the reality environment into neurotically cathected figures out of the past

(One assisting therapist was strenuously choked during such a projective acting out.) The abreactions may be repeated over a number of episodes, each sustained for hours at a time, until the conflict so represented is resolved. Several patients, following episodes in which a conflict was abreactively experienced but not resolved, requested the drug the following day in order to go back and pick up the still entangled threads that wanted unraveling: "There's something else that wants to come out"; "something's still smothering me, I've got to find out what it is"; "I almost had an answer, but I wouldn't let myself go deep enough. I don't think I'll be afraid to let go this time." The drug, to these patients, was a means of "going back," a means of reexperiencing and, by so doing, of understanding present difficulties in terms of their past roots.

The abreactions were usually accompanied by a specific age awareness, sometimes only a sense of orientation, sometimes involving a marked alteration in body image as perceived physically by the patient.

One great benefit derived from this aspect of reaction to LSD was the patient's quick acceptance of the past as the source of his present adjustment difficulties. It made the meaning of the present maladaptation clear to the patient in terms of actual life experiences. It also gave a background of experience to the interpretations of the therapist and diminished the resistances customarily met in this process.

Effect on Motivation and Insight

The effect on motivation and insight is one of the more dramatic sequelae of LSD experience. This positive effect appears to result from the experiential aspect of the LSD reaction. The patient promptly finds that there are within himself feelings, meanings, memories, etc., of which he had been unaware, which he would have denied had the doctor simply told him they were there. In essence, he discovers his unconscious. One patient who was started on analytic therapy at the conscious associative level, ventilated, as if from under great pressure, intense resentment of his father. After three weeks of examining some aspects of this problem, he announced that he was more relaxed than he had been in years, and was ready to go back to work. Because resistance to looking at his mother was still insurmountable, LSD was recommended. The patient acquiesced, more to please the therapist than for any other apparent reason. His first episode under the drug took him literally and experientially back to his mother's grave at the time of her funeral. He grappled painfully with the chronic feeling of being lost and abandoned which he had been fighting since age 12 following his mother's death. He spontaneously admitted the following day that he had never believed the therapist's hints that he resented his mother for dying, but now that he experienced it, was willing to go on with therapy. He requested more LSD, despite its painfulness, because it permitted him to accomplish so much so rapidly.

Another patient, with a depressive anxiety reaction triggered by war stress, ventilated freely, although under considerable pressure, at the conscious level. After his third conference, anxiety associated with his verbalisations increased his discomfort and he asked about taking a drug to "block

out the past." The wish to forget was related to his wife's infidelity. Everybody could be made happy, he maintained, by forgetting the past. After eleven conference hours, during three week's hospitalization, the patient was sufficiently relieved of anxiety to consider himself ready for discharge. His improvement adjustment was largely repressive in nature and he could be encouraged to no insight into this development. Considerably against his will he accepted LSD and stated:

> "This is a shock. I thought I was well. I was going home tomorrow. I wanted to prove to mother, daddy, Margie, Johnnie, and all the others I wasn't as sick as they all thought I was. Now I don't know what to think. There is nothing I haven't told the doctor. I have all my problems licked and I am at peace with the world—I thought I had made so much progress and I am disappointed that Dr. Langner does not think the same way I do...."

During the second episode, which was highly productive, the impact of the revelations relating to parental resentments were so disruptive that the patient was reluctant to take his planned weekend visit home. The false confidence stemming from previously reinforced repression was destroyed. He dreaded and desired the next experience under LSD. There was no longer any need to reinforce denial as the major mode of adjustment.

In the weeks devoted to LSD therapy, this patient experienced seven episodes. During his last episode, as the pressure of release was diminishing, he ventured that before LSD he had really thought he was well. Now, he no longer knew what to think. Seeing, through LSD experiences, how things "really were," he felt as though he had been "acting his life in a play." In retrospect, nearly two years later, when he answered the LSD questionnaire, he stated that LSD experiences "put me on my feet."

Patterns of Response

The types of response were as varied as the personalities of the patients responding. This brought under scrutiny in 1957 the popular misconception of the drug as a tool with which to induce a "model psychosis. LSD is a pharmacologically active substance, admittedly. However, this activity, rather than inducing something, appears to *release* variable somethings which are dependent on the individual's life experience and personality make-up. The only constant reaction noted in our hundreds of episodes was pupillary dilatation. In fact, this has been used to determine effective drug dosage. Other physical manifestations of the drug's presence were variable, and related only to the emotional state, chiefly on the sense of the defensive need to convert emotions to sensory and motor channels.

During our initial experiences with the drug, we were looking for patterns of response, and, in general, found none. While individual responses during certain stages of therapy were moderately predictable, as the therapy progressed, the patient's responses suggested a variety of rather different personalities—indeed, quite as different as the personality changes within the patient during their various re-developmental phases.

For instance, one young woman initially felt intensely insecure, unworthy, hostilely dominated and split within herself; she felt that she had no real self. After a few episodes, this feeling of being split crystalized into a sharply focused, dramatic experience—three voices trisecting her real life, her grandmother's, mother's and her own. Through the strength of her transference, she finally disengaged herself from parental and grandparental dependence and domination and cultivated a feeling of oneness —of *Self*—of being worthy and secure. The initial experiences had been cold, threatening and disruptive; the later experiences had been warm and reassuring. The changes in her Rorschach testing reflected a similar development. This represents a typical change in the pattern of response as the patient emerges from illness toward health.

PART TWO

Over 2,000 LSD sessions have been conducted under my supervision during the last three years. As a result of this additional experience, some new awareness and valuations have developed. Certain changes and elaborations in technique have led to some interesting observations. These comprise the subject of the rest of this paper.

First let us deal with the administration of the drug. I now prefer to do this after a minimum of two hours' fasting. With most patients I combine the dose of LSD, which ranges from 50 to 300 mcg, with 1½-3 grains of nembutal and 10 to 20 mg of methedrine. The purpose of the sedation is to diminish any anxiety that may create resistance. The methedrine maintains alertness and seems to provide a slight psychic push that would otherwise be absent. Thus, without trauma to veins, a combined narcosis-LSD effect is gained. In a number of patients this formula allowed the continuation of drug sessions, since LSD used alone resulted in disabling anxiety.

The average episode is still four to six hours. Before the patient is left alone, "termination" medication is usually given. This now consists of 100 mg Thorazine, or Mellaril, or 30-50 mg Librium which may need to be repeated in one to two hours. Rare panic reactions have been terminated by intramuscular Thorazine-barbiturate.

I would like to emphasize that patients are now both in- and out-patients. Carefully selected patients are capable of leaving the hospital after a treatment session eight to twelve hours after its inception. Patients permitted out-patient use of the drug must be carefully chosen and provided for. The possibility of dangerous acting out, should the patient "go back into the drug" after leaving the hospital *must be excluded in advance.* Severely depressed or hostile patients are not a safe risk for this type of management. Additional medication should be given immediately before leaving the hospital for the night; for this I employ 100 mg of Thorazine or Mellaril and carbital, grains 1½. This permits the patient's escort, usually the spouse, to put the patient to bed immediately on arrival home. Another condition necessary to out-patient use is the proper indoctrination the spouse or other responsible family member. A definite prohibition

against permitting a patient to leave the hospital the same day is the lack of someone to chauffeur him and the absence of someone at home to supervise him during the night. Patients not meeting these conditions must remain hospitalized overnight.

The influence of various attendants and therapists came under scrutiny, since normally we would feel this to be of major importance. Actually this was not the case. Using the same attendant through a course of treatment, or rotating several attendants, or using attendants of different sex does not appear to have any decisive influence on the LSD situation, as long as the attendant does not interfere.

One manipulation that has proved useful is to introduce a second therapist with whom the patient has a prior therapy relationship, thus accenting in the immediate setting a parental duality. Another simple maneuver that may elicit feelings of value is to walk out on the patient who needs the attendant's presence as a shield for separation anxiety or as an external superego. Another means of stimulation that has been tried is the introduction of certain props at strategic times, such as a nursing bottle, dolls, objects to throw and to hit. In selected instances we find that patients who need the permissiveness and reassurance of an attendant may more quickly prepare themselves for acting out against the original object by being encouraged to do so first with symbolic representations of these objects, just as is done so often in the dream world. We do not focus these feelings directly on the therapist because when the very hostile patient acts out under LSD release, the symbolic target is in a position to get hurt. I have had three fairly aggressive attendants who had a need to promote interaction. Each one of these has been physically attacked.

During the past year, one innovation that has proved very rewarding has been to extend a principle I have used in individual therapy to LSD therapy. This is to have husband and wife involved together in the therapy of either one of them. My technique here is to start the interview with one spouse while the other listens. When the first spouse is ready to embark on LSD (where this is indicated), the spouse who is still in a listening status is allowed to sit in on the drug episodes, provided his or her ego and love are adequate to tolerate the productions of the spouse in treatment. When the original patient has received enough help to accept the entrance into therapy of the listening spouse, the former may be allowed, under adequate supervision, to act as "therapist" during the drug sessions of the second spouse. This not only reduces the cost of therapy, a practical consideration, but intensifies interrelatedness between them promoting a level of communication that few marriages enjoy.

In an attempt to formulate the proper role and value of the attendant during LSD episodes, the following conclusions were reached:

> The patient who feels intense anxiety under LSD will need some figure present who can offer adequate reassurance to avoid panic and permit the process to continue productively. The patient who is elaborating his feelings through somatizations can be helped to convert them to feelings by timely interpretation. The patient who

has come to a dead-end may occasionally be led into productive channels through diversion into neutral territory followed by a meaningful challenge. Many patients who are on the verge of acting out may be baited into so doing. However, in all these situations, if the support from the attendant has brought about reactions or productions that the patient is not ready to utilize, the episode may be followed by some degree of retreat, as in any therapeutic situation where feelings are provoked or reinforced before the patient is spontaneously ready for them. My over-all assessment is that the major purpose of the attendant or therapist during an LSD episode is to provide reassurance with a minimum of interference and with only occasional interpretations or challenges.

For a period of time I was quite curious about the effect of the expectation of the therapist on the LSD productions. This was accentuated by the reports of the Jungians who fostered the "transcendental experience." However, in reviewing this phase of the problem, I perceived that my patients had their share of transcendental experiences without my having so labeled them. But these transcendental experiences were not a zenith, except momentarily. The rapturous narcissistic self-affirmation that evolved from these episodes might carry the individual through a couple of days or a couple of months. In all instances, they fitted into the total therapy as a jumping off place, a place at which the patient had divested himself momentarily of the previously self-paralyzing negations and experienced a positive if regressive self-image from which further motivation to grow was crystallized.

Any patient may at some time in his therapy feel obliged to please the therapist or seek approval through pleasing. This is more difficult to do under LSD than when not under its influence. Many times, based on dream material or day-by-day reactions, one can point that the patient is ready to look at this or that phase of his problem under LSD intensification. The result is more variable than the conscious willingness or resistance of the patient. Some patients have consciously wanted to pursue a certain emotional channel but develop, during the episode, a phase of their problem wholly unrelated and even more basic and traumatic. Because of these observations, I feel that the expectation of the therapist influences the LSD production less than the developments associated with other types of therapeutic involvement.

As in all analytic therapies, patients under LSD have their defenses and resistances. A list of these is enumerated as a matter of interest. Dreamlike symbolization, especially hallucinations of foreign places—frequently oriental—and underwater scenes and hallucinations of geometric patterns are among the commonest visual projections. Somatizations are very common and eventually become receptive to interpretation. Vomiting and bodily cold are among the most common somatizations. Physical pain may be symbolic and defensive, or a matter of literal memory. Panic or disorganization are next in frequency. Euphoria without any productiveness is occasionally met. Narcissistic compensations of a dramatic and

elaborate nature have been encountered and are difficult to work through, especially in the schizophrenic. Sleep is very uncommon. Most of these defenses can be worked through over a period of time.

In 1957, results with LSD led to the hope of facilitating psychotherapy through a specific pharmacological agent. This hope was based on a concept fostered by LSD experiences, a concept I labeled "intrapersonal psychotherapy." In susceptible individuals, LSD was seen to bring the patient into contact with himself, breaking the barriers of time, converting buried memories into immediate experiences with the full impact of their meaning and influence on the frame of reference in which the patient now lived. Without diminishing the importance of the transference investment in the doctor, which permitted the patient's becoming involved with the therapy in the first place, it had to be admitted that much perceiving of meaning and working through of the conflicts was now going on, not in terms of a transference relationship, but in terms of the actual primary life relationship. Certain patients, through abreactions, were now able to relate their problems directly to the original interpersonal source rather than through a transference. Instead of gradually identifying feelings and their meanings in the transference relationship, certain patients went directly to the original relationship while under LSD and spontaneously experienced cause and effect, need and deprivation, hurt and anger, loneliness and fear, in their primal frame of reference and at the physical and emotional age level when they originally occurred.

This happened so effectively in some cases that the presence of the attendant or therapist was felt as a hindrance by these patients. They preferred to be alone during the episode to perceive the causal relationship without external hindrance. Others requested that the attendant be with them, but refrain from making comments or asking questions, desiring reassurance from the presence of another person, but no interfering interaction.

PART THREE

January, 1965. It has been four and a-half years since my last involvement with LSD as a therapeutic tool. The following opinions summarize my retrospective impressions of its hazards and values.

One phase of judgment, which has been the focus of much of my attention, is the degree of ego integration concomitant with abreactive experience under LSD. I conclude that it is often considerable, at least definitively more so than with hypnosis or narcosis in similar patients. With many patients, conference sessions between LSD episodes were devoted to the patients' spontaneous exposition of the meaning, past and present, of the most recent LSD episode. Such a sophisticated involvement was limited to the neurotics and the less regressed character disorders. In such patients the facilitating value of LSD still stands as a positive value in retrospective judgment.

Is the "working through" time diminished for the patient, as a result? We have no schedules or valid mass surveys to help us here. My personal

impression, however, is that LSD experiences somewhat lessen the expected working through time in patients with moderately strong egos. One reason may be that LSD provides the "crisis" which some patients need for self confrontation. For others it may be the ego-enhancement which fosters an on-going assimilation of material as it becomes conscious through abreaction.

Another area of value is in certain psychotics. My observations suggest that in a significant number an improvement in self-image and a lessening of unconscious regressive fixations are readily demonstrable. I am reminded of a manic-depressive alcoholic who had had manic episodes every one to two years during the thirteen years prior to my contact with him. He sweated and shook profusely through eight LSD episodes with practically no verbalization and conscious insight. He could say only that he felt relieved in an undefinable way after each episode. His follow-up during a three year period revealed improved relating, negligible moodiness and more stable performance than during his previous periods of repeated hospitalizations.

A teen-age schizophrenic who was disorganized, unable to attend school, suicidal and overwhelmed with guilt and unworthiness was another nearly silent LSD patient. She would spit on the floor during her first episodes, rub her face in her spittle and pantomine that this rejected saliva was herself. Five years after her hospitalization she was reported as successfully married and functioning creditably as a mother—with no evidence of relapse during this period. These are examples of cases where no post-hospital therapy was involved.

In general, it appears that the pseudo-neurotic and paranoid schizophrenics do not respond favorably. From my over-all experience with paranoid schizophrenics I feel that LSD has no value in this category and may, in fact, be dangerous.

Schizoid personalities whose ego is not too brittle may be benefited by the LSD experience insofar as it gradually gives some of them an experience with feeling. One schizoid summarized this to a group: "I know now that I never knew what people were talking about when they talked about feelings till I took LSD. I didn't know till toward the end of my second year of therapy that feelings could be good as well as bad."

Schizo-affective reactions with a severe depressive component were not dramatically effected by LSD in any of the several such patients exposed. I feel that there may be a real hazard in using the drug in the depressive psychotics due to both the overwhelming responses and the excessive withdrawal which may occur.

How would I employ LSD if I were using it currently? I believe I would welcome it to explore resistances in any patient with a good to moderate ego. I would expect it to be highly useful for short term therapy in acute neurotic decompensations or in character disorders where the development of anxiety signals failing defenses. I would find it useful for occasional strategic intrusion in the undifferentiated schizophrenic with marginal functioning.

Do I feel any patients are being denied an experience of significant

value as a result of non-acceptance of LSD as a therapeutic tool? Yes, I do. This was re-emphasized this past summer by a 21 year old lad who had become disorganized the previous year, dropping out of college, working thereafter in a beatnik restaurant until he felt so empty he became practically immobilized. He drifted home in a state of helplessness and distrust, AWOL from Naval Reserve duty and threatening suicide if further military service were enforced. He went to New York in search of some undefined magic. While there he felt he was losing his mind. Black market LSD was offered by a friend who told him it might help. This lad summarized his one experience with LSD, when he saw me three months later. He had experienced his infantile need of woman. He perceived himself in terms of relationships past and present, acquiring some reality dimension of self. For two weeks after this single episode he had a sense of affirmation to his own being which was a new response within the limits of his conscious memory. Thereafter the euphoric phase diminished but just the memory of his experience that positive relatedness could be a reality provided motivation for new goals and lessened his previously devastating insecurity.

I cannot believe that such an instrument under proper supervision can be other than a useful chemotherapeutic agent in psychiatry. My experience with the drug in certain areas is positive. Further validation of its place in therapy is needed to promote any uniformity of opinion as to its usefulness, but there is already considerable evidence to suggest that the potential harm in the drug lies in its dramatic appeal to the sick therapist. I have wondered, further, if its repudiation by many is a function of too limited experience and, in some instances, the therapist's need to control the rehabilitative process more closely than can be done under LSD.

The Use of LSD 25 and Ritalin in the Treatment of Neurosis

Thomas M. Ling, M.D., M.R.C.P. *

I feel very honored to be giving a paper at the Second International Conference on the use of LSD 25 and happy to be back in the United States, particularly in New York State.

Like many others, I had the opportunity of extensive post-graduate training in psychiatry in North America between the wars, and lived here for three years. I have also visited the United States to lecture and meet colleagues eight times since World War II; in addition I have lectured on two occasions in nearly all the major cities of Central and South America.

I mention these facts as evidence that I have some knowledge of the cultural background in both North and South America, which is relevant in trying to understand the therapeutic procedure in using LSD in Western culture. Psychotherapy is not, in my opinion, a rigid static procedure that is inseparable from the cultural and religious background of the patient, or of the therapist. This is even more relevant when using LSD, which speeds up and accentuates the interpersonal relationship of therapist and patient.

It is also significant that all of us are investigating a drug that is closely allied to Nepenthe, well known to Homer in 640-558 B.C. In *The Odyssey,* Homer describes how Helen, the wife of Menelaus, prepared the potion:

> Then Helen, daughter of Zeus, turned to new thoughts. Presently she cast a drug into the wine whereof they drank, a drug to lull all pain and anger and bright forgetfulness of every sorrow. Whoso should drink a draught thereof, when it is mingled in the bowl, on that day he would let no tear fall down his cheeks, not though men slew his brother or dear son with the sword before his face and his own eyes beheld it. Medicines of such virtue and so helpful had the daughter of Zeus which Polydamna, the wife of Thor, had given her, a woman of Egypt, where earth, the grain giver, yields herbs in greatest plenty, many that are healing in the cup, and many baneful.

* Consultant Psychiatrist, Marlborough Day Hospital, London.

Hashish, often called Marihuana, or in common jargon, "Indian Hemp," has been consumed in India and the Middle East since time immemorial. Its utilization and export from one country to another is illegal and is the subject of various inquiries by W.H.O. Commitees. It is certainly widely used in Egypt and a number of reputable doctors in that country have expressed their conviction that it is habit-forming, but, in stable personalities, not deteriorating.

A more acceptable hallucinogen, the psilocybe of Southern Mexico, formed an important part of local religious rites, before the Aztec civilization. Hundreds of stone mushroom carvings in Mexico and Guatemala offer proof of its importance long before the white man occupied the Americas. According to Dr. Hoffman of Basle, who synthesized LSD in 1938, there is a close chemical affinity between psilocybin and LSD. There is a good deal of research work being done currently on psilocybin but in the United Kingdom it is regarded as therapeutically unpredictable.

The synthesis of LSD is a landmark in psychopharmacology and has provided us with ample quantities of a drug capable of great good, or great harm.

My experience with the drug dates from 1953 and follows the publication of a thoughtful article in The British Journal of Mental Science by Sandison in that year.

Since then we have all learned a great deal as to the cases that will benefit and probably be cured and those that cannot tolerate the upsurge of unconscious material. The latter may be disintegrated.

This discrepancy is most important because LSD is an extremely powerful drug and it is essential to follow the old Roman saying, *"Nil Nocere,"* which means "do no harm." This concept in medicine is even more important now than it was in Roman days, because in all fields of medicine our weapons are much more powerful. In no sphere is this more true than in psychopharmacology and one is forcibly reminded of the saying from St. Matthew's gospel: "Unto everyone that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath." (XXV; 29)

PROCEDURE IN THE UNITED KINGDOM

In the United Kingdom, the drug is sold directly to mental hospitals, and to approved psychiatrists. The manufacturer's medical staff satisfy themselves that the individual psychiatrist is reliable and really knows how to use the drug. The company reserves the right to sell or withhold the drug from any psychiatrist, and it is never on sale through any ordinary pharmacist, or to lay psychologists.

Unfortunately, like most international cities, London and other big cities have their "black market" where it is said that all vices and all drugs can be bought, if you know where to go and can pay for them.

Without posing as virtuous, I personally do not know where one would get black market drugs, although cynics would reply that I do not

need to know, as I can buy LSD from the manufacturer and prescribe legally other drugs as required.

The North American culture is very different from ours and, judging by some of the journalists' reports and the irresponsible magazines, drugs, including LSD, could be bought without difficulty on many campuses and in most cities in the United States.

Responsible United States doctors were as disturbed about this state of affairs as was the Food and Drug Administration in Washington or professional friends in Europe. It is scarcely surprising that the United States has had the regrettable episode of the two psychologists, Leary and Alpert, being asked to leave Harvard for giving LSD to undergraduates experimentally. There were also reports circulating in Europe of orgies in the United States, under black market LSD, that seem far removed from the Oath of Hippocrates.

No doubt these latter problems will be cleared up in the near future, but the immediate result is unfortunate in giving LSD an erotic and sensational image. As doctors, we are only concerned with its clinical and research interest.

Theoretical Background of LSD

There are already thousands of references to this drug in the world literature, and it is evident that it is used in widely different ways and on different sorts of cases.

Hallucinogens such as LSD and certain other drugs have been used for centuries to produce transcendental experiences, relieve anxiety, produce religious states and enhance self understanding. As Cerletti (1963) has pointed out, the first scientific description of the hallucinogenic drugs was by Spanish conquerors of the Aztecs in the 16th century.

In 1898 Havelock Ellis described an experiment with Mescaline that he had conducted on himself and at about the same time Weir Mitchell (1897) described analogous experiences. Amongst the known hallucinogens the most widely used in recent years is lysergic acid (LSD 25). As yet its mode of action on the central nervous system is not fully understood, despite investigations going back for forty years.

In 1923 it was found that ergot alkaloids possess central non-toxic action, and inhibition of pressor reflexes was described. LSD 25 is the link between the naturally dehydrogenated and partially synthetic alkaloids of ergot.

An indole ring in LSD 25, producing its resemblance to serotonin and reserpine, has suggested some of the mechanisms by which the drug may act. Whether given by mouth, intravenously or intramuscularly, it is rapidly circulated to all the tissues of the body and broken down within three hours.

In my experience this drug is extremely powerful for good and ill. Schizoid or pre-psychotic individuals can be disintegrated and rendered definitely psychotic, which is tragic and ethically indefensible.

It appears from some of the articles in the lay press in the United States that LSD has been obtained and taken by individuals without

previous psychiatric investigation and continued psychiatric supervision. In some cases this has been in the form of a mixed orgy, because with certain people it is a strong erotic stimulant. I suggest that this is dangerous, irresponsible and certainly not medicine as understood from the days of Hippocrates. Many of the people wanting to behave in this way are so unstable, or else pre-psychotic, that they are clinically unsuitable for taking such a drug.

A careful psychiatric and social appraisal should be made of each potential case to assess the conscious problems, the ego-strength, the tendency to depression and the total social situation.

Treatment with LSD is not the last resort of the incurable or a magic cure for the deteriorated schizophrenic. Given good intelligence and ego-strength, it is capable of giving remarkable insight and revealing to the patient the infantile and childish roots of the neurosis.

It is my belief that it is essential to assess the ego-strength to be sure that the patient can tolerate and digest the unpleasant revelations that he will receive about himself.

This ego-strength is determined by clinical experience in assessing the total life history of the patient and his capacity for dealing with conscious stress. If he has always escaped from his day-to-day difficulties through alcohol or drugs, he is probably too frail to face up to the self-understanding that LSD provides.

This same adverse comment applies to the professional failure, *e.g.* the man who can never pass his law or medical exams, and takes on a succession of semi-skilled jobs.

Use of Projective Tests on Border-line Cases

Help can be obtained from projective tests, particularly the Rorschach test. If the psychologist detects incipient schizophrenia, poor motivation or poor ego-strength, such cases are rejected for treatment.

It is impossible to be dogmatic as to how helpful the psychologists can be, because one frequently loses sight of the rejected cases. In addition, some of the cases given treatment with the psychologist's support have proved so resistive that they have not been helped. A great deal depends on the skill of the psychologist, and an individual who has taken a short course in the Rorschach is dangerous. Until her death three years ago, I had the help of the late Dr. Elaine Gladstone, Secretary of the Rorschach Society of Great Britain, who was particularly skilful in her predictions.

In the absence of really skilled psychological help, it is wiser to rely on clinical judgment alone than on inexperienced psychologists.

Apart from the risk of precipitating a psychosis, the other major danger is suicide. The risks of this are assessed in the clinical survey and it is frequently advisable to see a patient at length two or three times before deciding on his suitability for treatment. Those who have attempted suicide in the past are nearly always rejected as are those with marked cyclo-thymic mood swings. In many cases the self-understanding occurring during LSD treatment can be very depressing and needs considerable

therapeutic and domestic support. This paper is based exclusively on treating out-patients in a private clinic, or in a Day hospital.

Conditions of Treatment

In my opinion, LSD is a remarkably effective drug when given to the right person under safe conditions by psychiatrists who have themselves selected the cases, and who have themselves taken a full course of treatment or had a full analysis.

Experience has shown that the best results are obtained with the patient in bed in a single, quiet, pleasantly furnished room. Each bed is provided with a bell, so no patient is at any time out of touch with the staff. Occasional aggressive and suicidal attempts are made during treatment so the windows are barred, with muslin curtains to soften the effect. As patients' behavior is sometimes unpredictable, the door of the treatment unit is kept locked. In early days one woman patient put on her overcoat over her nightdress, and shoes, slipped out of the building and was next heard of in the casualty department of a well known teaching hospital. The young doctor on duty was uncertain whether she was psychotic or intoxicated or both. Such episodes are potentially dangerous and are to be avoided. Some patients bring their own gramophones and discs, but piped music is not used. Musical people often find classical music helpful, although one business executive gave up its use as he felt he was delaying his recovery by being sexually stimulated by Wagner.

Some writers claim success with LSD given in groups, but this has not been my experience. The drug makes patients unduly suggestible so that if one individual verbalizes with great emotion a particular experience, the others are likely to imitate the experience. It is my belief that each individual needs psychiatric help with current problems, and unconscious background experiences, in early childhood or infancy, that have contributed to current neurotic reactions.

The Role of the Therapeutic Staff

It is essential to secure a good rapport with the patient before starting with LSD, and this frequently necessitates two or three interviews of about an hour each. About 20 percent of fee-paying patients have had a variable amount of analytically oriented psychotherapy which has been marginally helpful. Such individuals have some insight into their deeper difficulties and are used to verbalizing their thoughts. Some are referred by orthodox psychotherapists who perhaps find the patient's resistance too strong. Others have abandoned their analysis after a year or two as they feel that progress is too slow, or the cost prohibitive.

Once a decision is made to proceed with LSD therapy, an outline of its effects is given in a spirit of reasonable optimism. This proves very difficult because it seems impossible to find words to convey the LSD experience. Nearly all of us using the drug in the United Kingdom have ourselves taken a course of treatment, and have acquired a deep understanding of our own problems. I think this is essential if we are really going

to help people. Patients are enormously helped in a difficult situation when they learn that the therapist has really taken the drug himself with a successful result.

Treatment is most effective when the psychiatrist is working in close cooperation with a mature nurse, and the more motherly she is the better. After a few treatments the psychiatrist and the nurse symbolize the patient's parents. On one occasion, my nurse and I were treating a 40-year-old woman with anxiety dating from a very disturbed early childhood. She became frightened, and suddenly said out of her reverie: "Why do you two hate each other so much?"

The next day, when the session was reviewed, she saw spontaneously that she was not talking to us at all but to her parents, both of whom are dead. From her pre-treatment history, it was evident that her father, an M. D., had suffered "shell shock" in World War I and had been in a psychiatric hospital for some months. She had always known that her parents' marriage was unhappy and under LSD she worked through, in four successive sessions, her feelings of guilt, anxiety and sexual stimulation, induced by his sexually molesting her when she was a child. She was married unhappily to a man her own age and was always attracted to men a good deal older than herself, until she was released from her deeply ambivalent attitude toward her father.

The Significance of Transference

Once patients have broken through into their unconscious they develop patterns of behavior reminiscent of the nursery. They usually like to have the same room and the same staff to treat them. They get seriously disturbed if their appointment is put off or a member of the staff is absent. One or the other situation is regarded as a rejection and can be strongly verbalized by the patient. Intellectually they realize their attitude is irrational, but emotionally the attitude is outspoken and aggressive.

From the beginning, emphasis is placed on the fact that treatment is a cooperative effort between patient and therapist and not something that is done by the latter to the former. Each therapist develops differences of his own and in our clinic some psychiatrists are much more permissive than others. Thus, in every case, I discuss dosage with each patient prior to the session until the optimum level is found.

Sometimes patients will ask for more as they feel incapable of being carried through their resistance into their unconscious problems. Once the right dosage is determined, it is usual to remain at this level.

Some patients develop a relative resistance to the drug. In such cases it is advisable to give them about six weeks' rest from LSD therapy, with a variable number of psychotherapeutic sessions in between. In my experience many patients become impatient with frequent analytically oriented sessions. Thus a senior executive of an international advertising agency who had had two years of analysis, four days a week, stated that he had derived more insight in his third LSD session than in the two years analysis. As a busy man, he made it clear he was not going to spend

"endless hours" between sessions in view of his failure to improve previously with one of the leading orthodox analysts in London.

Selection of Patients

The selection of cases for out-patient treatment is all-important. Psychiatric diagnosis is notoriously inexact, so that it is more helpful to list the symptomatic and social factors influencing this decision.

The following are favorable indications:

1. Good motivation
2. Adequate ego-integration, good boundaries and defenses
3. Adequate perception of reality
4. The absence of marked schizoid features or early schizophrenia
5. The absence of previous genuine suicidal attempts
6. A regular job to which the patient has at least made a moderate adjustment
7. The presence of an understanding spouse who can give adequate support between treatments
8. Good intelligence and reasonable education

Cases that under my "open hospital" conditions are unsuitable for treatment include the following:

1. Markedly schizoid or schizophrenic individuals. The history of a previously schizophrenic episode is a warning as there is a real risk of precipitating another schizophrenic breakdown.
2. Patients who have made one or more genuine attempts at suicide or who admit to planning suicide.
3. Poor motivation. This may include patients referred from Courts and who take on treatment as preferable to prison. Poor motivation is frequently found among young people who are pressed to have treatment by parents.
4. Poor level of intelligence. There is no clear level of intelligence below which treatment is likely to be ineffective, but genuine insight is much more effective among those capable of thinking through their experiences between sessions. This is partly a matter of the psychiatrist's temperament and partly of time. I am not particularly tolerant of fools, and am likely to get impatient in trying to explain the obvious in two syllable words.
5. A really impossible social situation. The woman whose husband is an alcoholic philanderer with whom she is still half in love and from whom she does not want a divorce, is a poor risk. Psychiatrically the husband is much more ill than his wife but has no intention of seeking help. I don't approve of treating the wrong partner and such situations are better avoided. Occasionally

such husbands are talked into treatment by their lawyers and conform for the sake of appearances. Their basic motivation is poor and the end result usually unsatisfactory.

6. The paranoid schizophrenic is very likely to be made worse by LSD treatment and may easily become litigenous. They should be avoided.
7. Those over 50 years old are unlikely to be successful but much depends on their emotional lability. Here again the total situation must be reviewed. The individual who has made a reasonable adjustment to life is more promising than the social or economic failure.
8. The middle-aged spinster is a very uncertain risk and better avoided. Despite the heavy loss of manpower in two world wars, and the relative predominance of women in certain age groups in our culture, there is little doubt that the failure to marry happily is frequently due to unconscious factors. As a woman gets older, her chances of marriage decline and it is unkind and frequently dangerous to expose these internal factors to the frustrated spinster. The realization that she herself has "caused" her own situation may well precipitate a suicidal depression.
9. The social isolate, whether male or female, is usually a poor risk. All big cities produce, and attract, such individuals and the dynamics of their isolationship are usually multiple. Some are schizoid personalities, others are frail and over-anxious. Their interpersonal failure is reflected in other facets of their lives and they make poor risks under LSD. In earlier years I treated two such cases. One committed suicide and the other became so depressed that she had to be admitted to a mental hospital. Such individuals frequently live alone and the absence of warm support at home for two or three days after each treatment may aggravate their personality disorder.

Details of Treatment

My experience with this drug since 1953 has been confined to carefully selected psychosomatic and neurotic cases treated under open hospital conditions. Domestically employed women are usually treated in the daytime and are motored home by their husbands about 6 P.M. The treatment lasts about seven hours and patients are *never* allowed to drive themselves home. They are variably exhausted at the end of the day and are glad to go straight to bed.

Male patients come in for treatment in the evening about 6:30 P.M. after having a normal luncheon but no alcohol or meal before the treatment.

In their case the treatment goes on till about 11:30 P.M. They are given Largactil and a sedative, and leave the next morning about 8:30 P.M. after a short interview with the therapist.

All cases are treated individually in single rooms, and in my private clinic, hospital appearances are kept to a minimum. The rooms are taste-

fully furnished and give the appearance of a private apartment, which in effect it was before conversion. The beds are comfortable, there is a shaded light nearby, and a bell over each bed.

Treatment Staff

Quite apart from the setting, the staff are equally important. Every attempt is made to establish a good rapport before treatment is started and individuals are often seen for two or three interviews to determine their suitability for treatment and for the psychiatrist and staff nurse to get known to the patient. Continuity of personnel is essential and grave difficulties arise if the duty nurse is ill. Under the latter circumstances, I notify the patients and frequently they prefer to postpone their session. A strong dependent transference is invariably established between the patient, the psychiatrist and the nurse. The latter are parent substitutes, and often patients during the session will address one or other as a parent, fluctuating between reality and fantasy. In my clinic I am fortunate in having two married, mature women nurses, both of whom have worked with me for some years. Neither has been formally analyzed, but from experience and intuition, they both have a very good understanding of psychodynamics. I would not use this treatment with the help of a young and perhaps emotionally immature nurse as these latter factors would become very obvious to patients under treatment. The degree of insight patients acquire about their parents, or the staff treating them, is truly remarkable.

During the session, I never leave the clinic, and either the nurse or myself is available to be with patients as soon as they ring the bell. I have no hesitation in holding their hands if they are frightened, or listening to recently revealed material if the patient wants to try and talk. It is my practice to be sympathetic and understanding, but to say as little as possible during the session. There is a strong temptation for patients to intellectualize the session by trying to use speech as a defense against further feeling. This desire to speak is particularly common among patients who have previously had extensive psychoanalysis without acquiring appreciable insight.

Many patients become dependent on one or another member of the team depending on their basic psychopathology. Some insist on the same individual giving them their injections. At the end of a session some women prefer to discuss their embarrassing insights with the nurse rather than with the male psychiatrist.

After a session, patients are variably exhausted, and day patients are aware that the drug is still partly working on them. People's reactions vary according to constitution and the amount of repressed material brought to the surface. Very rarely a day patient is too anxious or depressed to go home by car with her husband. This necessitates heavy sedation and the individual has to sleep in the clinic for the night. Such cases are always seen by the psychiatrist early the following morning and nearly always have recovered.

Night patients are easier to handle as they can sleep it off in their treatment beds, are given breakfast and are always seen by the psychiatrist

before going to work. These individuals will feel variably tired and ineffective the day after treatment and are always glad to get to bed early.

These evening sessions are important, and in my opinion, vital, in England, where there is still substantial prejudice against those needing psychiatric treatment. Government departments, big corporations, banks and lawyers' offices are particularly suspicious and officials from such organizations are most anxious to be treated secretly. They also cannot lose a day from work every two weeks.

For years all our career civil servants have had to sign the Official Secrets Act, and our senior civil service recruits only Honors University graduates, who have a high level of integrity and status.

I have treated 18 senior civil servants with a wide variety of psychiatric difficulties and not one of them has ever divulged anything of a security nature under LSD. In therapeutic interviews, I always make a point of not asking questions about their work and have never had any difficulties under this heading.

Psychotherapy and LSD

As stated above, I am always available during sessions to give support but quietly discourage patients from talking about their experiences. Many are tempted to do this as a defense against the release of further feelings and insights, but it is frequently helpful to go over the main features of the session afterwards. Patients are more articulate the morning after an evening session and ensuing sleep. Each is seen for about 20 minutes before they go off to work and all patients are encouraged to write up the session as freely as possible within 48 hours of its termination.

The great majority cooperate in this and realize that as they write, further self-understanding comes to them spontaneously. They are asked to mail these reports to me, and they all are told that I always open my own mail. They also are told that their reports are locked away. Both of these statements are made to encourage frankness. Patients are also asked to keep a copy of each report to be read over again before the next session.

In general a session is given every two weeks and many patients demand the same room each time. All cases are seen for at least an hour between sessions and their reports form the basis of the therapeutic interview. If in doubt, patients are seen more often and all are given my telephone numbers throughout the week. They are encouraged to ring up if they feel disturbed, irrespective of the day or time. A telephone talk is often very helpful. Occasionally it is advisable to see a patient urgently and they come down to my house in the country on a Saturday or Sunday if necessary.

It is my belief that a good transference is essential for successful treatment and one must accept full responsibility for all cases, in cooperation with the family. As regards the latter, I never reveal to the spouse or parent details that have come up, as this immediately breaks the patient's confidence. What patients reveal or conceal at home is their own affair, but is confidential with me.

As stated above, patients are discouraged from talking during the

session but sometimes this is compulsively necessary. I recollect an attractive 22-year-old girl with multiple anxiety symptoms, and difficulty in making any satisfactory adjustment with boy friends. She was intelligent but extremely immature and insisted on her mother's sitting with her throughout. The mother was an intelligent but unloving woman who, during the patient's early years, had been the editor of a mothercraft paper. She was then a disciple of John Watson in the United States, and of Truby King in England. The girl cleared up all her anxiety and fear of sex in 14 sessions and brought up a great deal of infantile rejection and unhappiness in relationship to her mother. The girl felt that the mother gave much more attention to her magazine than she did to the patient as a baby.

At the end of the treatment, the mother told me that her experience had been very painful for her and equally revealing. She realized from all her daughter's verbalized feelings and experiences many of her own deficiencies and the false "behaviourist" advice she had given to thousands of other young mothers every month.

The majority of patients can release their feelings on their own, provided they know that the therapist or nurse is available to give them support.

The Action of Ritalin

LSD 25 in appropriate doses temporarily accentuates anxiety by the release of repressed experiences and feelings.

In the past many patients found treatment with LSD alone frightening, and decided to give up, so the coincident use of Ritalin has provided a major advance. The latter modifies the LSD and enables patients to face up to their problems with penetrating clarity in a state of peaceful reverie.

Ritalin was synthesized by Ciba in Basle in 1954 and is a Methylphenidate hydrochloride. It can be given orally, intramuscularly or intravenously and is a mild cerebral stimulant. The intramuscular route is usually preferred. Drassdo, Schmidt, *et al.* (1954), have proved its efficacy clinically while its pharmacology was described by Meir and Tripod (1954).

Ritalin is a central nervous stimulant with an action between the amphetamines and caffeine.

Ritalin modifies LSD and enables substantially smaller doses of the latter to be used. Why the combination should have such a penetrating effect on patients is not clear but the truth of this is equally evident to the therapist and the patient.

Although Ritalin has rather similar effects to the amphetamines, it has the following advantages:

1. The action is smoother and far less likely to make the patient overactive or psychotic.
2. It improves the patient's mood without the excessive elation produced by methedrine. The self-critical attitude is unimpaired and is much deepened.
3. The onset and waning of effect are more gradual than with the amphetamines, so that patients do not have marked mood swings
4. Ritalin has an extremely low toxicity and is equal to caffeine.

5. When given intravenously to patients under LSD, it has an immediate and penetrating effect, but is usually used intramuscularly.

Dosage

Once a good rapport has been achieved, I give a supporting outline of the treatment and start with 40 or 50 mcg of LSD with 10 mg of Ritalin. This is not usually disturbing or very penetrating and the next time the dose is increased to perhaps 75 mcg of LSD and 20 mg of Ritalin. On each occasion the dose is discussed informally with the patient and is raised gradually until the optimum is reached. This optimum varies widely from 50 mcg to perhaps 175 mcg, and the patient soon learns to realize the optimum dose. The Ritalin is increased to 20 mg intramuscularly and can be repeated once or twice during the session. The latter quickly precipitates the patients back into their unconscious problems.

Six years ago, I treated an intelligent young woman of 29, with a 10-year history of severe migraine, with three sessions of 50 mcg of LSD with supporting Ritalin. Within half an hour, she was back in her infancy, seeing her original mother, as a pretty young woman with dark hair. At the end of the session she admitted concealing from me that she was illegitimate, a fact of which she was very ashamed.

She worked right through her extremely strong ambivalent feelings toward her real mother in the three sessions. Six years later she is now completely at peace with herself and has never had another attack of migraine.

At about the same time, seven years ago, I treated a clergyman with a strong sadistic homosexual relationship with his teen-age son. Consciously he felt very guilty and needed 43 sessions to resolve his problems. He is now happily married and the son is doing well at University.

In my experience it is impossible and unwise to guess at the number of sessions required. It is impossible to assess the strength of the resistance and if a guess is made, this can be bad for the patient.

If one's guess is an under-estimate, the patient loses faith in the therapist. If the guess is excessive, the patient may feel that he has really resolved all his problems and will be left with an uncertain feeling as to whether to have further sessions to complete the therapist's "shot in the dark."

Reasonably intelligent patients know quite clearly when they have resolved their problems, and it is clear to the patient and therapist that further sessions are not required.

In a small minority of cases, the individual may come back after perhaps three months, saying that his problems have not been completely resolved, and asking for a further session. The patient's request is granted because it is my belief that this form of psychopharmacology is carried out as a joint enterprise between patient and doctor, and is not something that is done to the patient by the therapist.

This is a very different approach from the usual one in orthodox medicine and the same approach is used in determining intervals between sessions and the number of psychotherapeutic sessions. Some cases virtually

unravel their problems unaided, while others need considerable support and interpretation. The average interval between LSD sessions is two weeks.

Preparation of the Patient

Apart from the careful selection of patients outlined above, it is my custom to build up a friendly relationship before giving the first treatment. This includes an informal explanation of the action of the drug, and encouraging the patient to approach the therapeutic situation as casually as possible. I usually emphasize that I myself have taken the drug on a considerable number of occasions, and include an explanation of its protean physiological effects. After two or three sessions patients completely accept these side effects, but at first they are disturbing.

To avoid disappointment I warn patients not to expect magical results from the first session and there is no doubt that their experience in "utilizing" the drug is very helpful. There is actually wide variation in the first session which is always approached with apprehension. Sometimes the patient goes back to the age of about six, and remembers clearly the names and faces of other children and feelings toward parents in early days. Other individuals get a remarkable experience early on, as evidenced by the following report.

Miss XY, 28, was a single, intelligent, Canadian, white University graduate, and a school teacher. She complained of inability to make up her mind whether to marry an eminently suitable man of 32. She recognized the fact that she was very ambivalent towards him and admitted that she had broken with four other suitors. In theory she would like to be married and have children, but inside herself, she felt terrified of the physical side of marriage. She was a virgin who always had become upset when men were unduly familiar when "petting." The background in Ontario was rigid, non-conformist and strictly teetotal. As far back as she could remember, her mother had deplored sex and males. Her mother had always avoided the girl's early questions about babies, etc., and had not even been able to explain to her about her forthcoming periods. There were three other grown children, none of whom had married.

The patient had had a year's analytically orientated psychotherapy before coming to England, but without any appreciable alleviation of her anxiety.

Her report of her first LSD session was as follows:

> "Under the drug, my first impressions were very hazy and nebulous; then I seemed to be lifting the lid from a very black and sordid cauldron. Feelings and events swirled around, but always something drew me irresistibly toward an event having to do with an assault, or attempted assault on my mother, during my very early childhood. I associated a feeling of extreme revulsion toward a large pair of hairy hands—in fact, when coming out of the drug I could hardly bear to bring myself to lift the cup of Ovaltine, because it seemed that my own hands had grown beyond proportion and looked frighteningly large, like the hands in my memory. I remember no clear details—

just a feeling of being touched or menaced myself—a feeling of horror and violation. This was the central and most terrifying aspect of the whole treatment. This man seemed symbolized by a large black spider, the personification of loathsome evil. I'm fairly sure he was my grandfather (paternal). There was another more hazy memory of another occasion when I had wandered off in a park and been approached by a dark man speaking with a foreign accent and warning me not to tell. I have no recollection of being assaulted by him, just of a horrifying menace. Unfortunately, the details are very hazy. After this, whenever touched or patted on the head by male relatives, especially uncles, looking like my grandfather, I always shrank back in revulsion, and became a legend in the family for 'shyness.' An uncle whom I had never seen before came for a visit and attempted to kiss me, and called me a 'handsome child,' and I felt indignant and declared I wasn't.

"Every memory or experience brought to light by the drug seemed to have some overtones of sex—all very unhealthy or frightening, or unpleasant.

"I awoke one night with a bad dream and ran into my parents' room, the door being ajar. There were shocked exclamations as they moved apart, which I sensed dimly in the dark, and my mother took me back to my bed. But I suspected that something not quite nice was going on! I remember a feeling of indignation that my mother had other activities apart from me. Then I remember trying to hug my mother and being unable to do so because she was enormously pregnant. I feared something was happening which would take her away from me, which was confirmed one morning when I awoke with a terrifying feeling of lostness, because she had gone, as my grandmother said, to get a baby brother. I cried in dismay 'I don't want a brother. I want my mother.' There was a feeling of utter desolation, and later, jealousy.

"I remember, as a small child, hearing my grandmother and an old housekeeper (both of whom reveled in gossip) discussing someone, and lowering their voices and saying she was going to have a baby. As they obviously did not mean for me to hear, I concluded there must be something extremely nasty about having a baby.

"Later, when a younger sister was expected, a parcel of baby clothes arrived by mail and I exclaimed enthusiastically 'These must be for the new baby!' My father said in shocked horror: 'Who told you that? You're not supposed to know anything about it!' He seemed so disturbed that Grannie had told me 'on the sly.'

"I remember asking mother where babies come from, and she said very sternly: 'They grow under Mother's heart,' and warned me never to discuss this or giggle about it with other children at school, as it was so sacred. I wanted to ask more, for instance, how they got out to be born, but feared to ask further for dread of being scolded.

"I remember hating bath nights, as the room was always full of steam and I had 'goose pricks' from the hot water. It seemed that my mother was always cross and tired by that time of night. She would bathe me, then hand me the cloth and say wearily: 'Now wash between your legs.' I felt indignant about that terminology, and felt I didn't want to do it with her in the room.

"I remember a feeling of uneasiness at the time of my first menstrual period (which I had learned about only in snatches from other girls, and not from Mother). The day it began, my mother gave me a very stern lecture of warning about being extremely careful where men were concerned, and told an incident of a girl who 'had been taken advantage of by a young man and had had a baby. I felt shame and disgust and also anger at her for telling me this, at that time when I was already very upset about this new experience. I remember also a time when she told me she was thinking of leaving my father, because of disagreement over religion. I was nine years old and had been sick with measles. I asked where she would go and she said she would get a job as a housekeeper at a hospital. I felt my secure world had crashed completely, and also felt terrible anger at her for 'letting me down.' I felt no religion could be worth that anguish. She left me to do some clothes, and I cried by myself, but did not let anyone know, and spoke of it to no one. But always after that, whenever she and my father quarreled, I would wait anxiously and listen at keyholes, to see if she really were going to leave him. There were staccato sounds of quarrelling, and voices raised in anger, but no distinct words. It was at this time that I seemed to withdraw completely from loving anyone, and replaced it with a sort of bravado, and built a wall of armor around my own world. Yet in all those years to follow there was constant conflict because I so wanted to love Mother and she was so often kind and gentle, and self-sacrificing. I pitied her, yet felt terrible guilt for having these ambivalent feelings. During the course of the night I reached out and implored the nurse to take my hand, and it seemed as though she were my mother. At first I grasped her hand eagerly with feelings of love, alternately conflicting with hatred. Other family figures and friends were extremely shadowy. My father appeared only once, having lost his temper at my older sister and exclaiming in anger: 'For two cents I'd give you a horsewhipping for that,' but of course he never did, as his discipline consisted of occasional idle threats. All the same, I felt a fierce indignation at him for what I considered a most indelicate threat, and a terrible indignity.

"I remember my sister and I had got a booklet on the facts of menstruation and mother found it and was angry, and burned it, and said if we had any questions about that, to ask her! But we were too frightened to ask her anything, fearing that she would think our curiosity sprang from nasty minds.

"Sometimes she would have bedtime talks about the facts of life, but nothing clearly or factually explained. She once said that there must be a father when a mother had a baby, and I promptly cited the case of a young widow neighbor, who had had a baby shortly after her husband's death. I don't recall any satisfactory answer given for that one!

The most outstanding memory of this 'sex education' was the atmosphere of sternness and warning surrounding it. This, coupled with snatches of gossip overheard in adult conversation, led me to suspect that there must be something very nasty indeed going on in the adult world, connected with marriage and babies.

Funerals also played a very horrifying role in my memories. As you know, 'The American Way of Death' also prevails in Canada,

and I have vividly morbid memories of the sickly perfume of flowers, of soft carpets and lighting, of grotesquely made-up faces and rigid hands of the dead person, lying amidst shining ivory satin, a material which to this day fills me with fear and revulsion. I remember being held up to view my grandparents and various great-aunts and uncles, and feeling shrinking horror at having to look upon such gruesome sights, yet fascinated by their motionless eyes and hands. One funeral, especially, made a lasting impression. A young schoolgirl I knew had been killed while crossing a street, and was 'laid out' in a beautiful white frock and white velvet coffin, in church, surrounded by flowers. The church was packed, and in full sight of all of us, her weeping mother bent and kissed her before the coffin was closed. My feelings were not only of sorrow, but mostly of envy, because she was getting so much attention and was the centre of the stage in a way I had never been. I thought how lucky she was to be star performer, and how I should like to play a leading role like hers, and incidentally to get revenge on my mother for all her strictness and the times she had been cross and let me down. These 'death wishes' occurred several times throughout childhood and adolescence, as I imagined my funeral with everyone overcome by remorse and myself smiling with secret revenge.

"There was open disapproval on the part of my mother over my going out with boy friends. For me there was tremendous conflict in going against her wishes, so I met some of them secretly, and indulged in a certain amount of 'necking' yet I always felt guilty about this. At the same time I felt starved for affection and welcomed the warmth and temporary feeling of security it offered.

"When I returned after an 'open' date, my mother implied suspicious disapproval so I resolved never to tell her anything, or confide in her in any way. As the drug began to wear off, the old, menacing hands and leering face held near mine persisted, but without clear detail. Then all the images began to fade and I had a feeling of great horror at what I had learned; of exhaustion at the gamut of emotions I had experienced, and of accomplishment that at long last, the lid was off, and a good deal of dredging had been done."

Three days later, she was seen in psychotherapy and expressed great confidence in all that had come up. She volunteered the information that without treatment she would never have faced up to marriage and would certainly have invented an excuse to get out of it. At the same time, it was evident that she was strongly in love and clearly pulled emotionally in two directions.

A week later, she was given a second session of which the following was her summary:

"This time the drug started to work much more rapidly, and went immediately to another disturbing area of my life—my childhood experiences of religion, and the distorted image of God that was presented to me. My mother at one time became very interested in a highly emotional religious sect which believed in faith healing and demon possession and I was made to accompany her to meetings, which terrified me very much. This caused a great rift between her and my father, who disapproved entirely, but she stuck to this with

fanatical tenacity for several years. During this period, my life was lived in complete fear which I again experienced vividly under the drug, with tightened muscles, beating heart, my mouth dry, and nausea. Coupled with the fear of having to attend highly emotional religious meetings every week was the gnawing fear that my father and mother would be divorced over this question of religion. I sensed the bitterness in the household, yet felt helpless and utterly at the mercy of my mother who dominated the household. I equated her authority with that of God.

"The image of a God of wrath and anger was symbolized under the drug as a great swooping vulture with talons ready to claw me if I misbehaved. I then tried to remember earlier stories and pictures of Christ as a kind, good shepherd who actually *loved* children; this friendly view of the Christ of my earliest memories later turned to one of unspeakable horror as I viewed a very graphic painting of the Crucifixion, with frightful details of thorns and blood, and a gaunt, emaciated, green carrion figure of Death, with talons outstretched, very much like the God I so feared. Then I was told repeatedly that I must love and obey God, and I felt guilty because in fact I feared and hated Him. There was also fear of the devil, who was a very real figure of horror, and of hell, whither my feet were always slipping. This was seen as a lake of greenish flames, peopled with hobgoblins very much like our children's Hallowe'en masks.

"I have always had an almost fanatical fear of flames and fire and even feel faint in a very warm room, which I now trace to my earlier fears of hell, and my memories of my mother praying that we would be 'saved' from going there. My childhood was filled with stern warnings against sin—by teachers, mother, and preachers' sermons, and by my own accusing conscience. My theology could be thus summed up: any sin will send you to hell, especially dancing, theatre, immodesty, drinking, etc. I felt that God must disapprove of any bodily pleasure or good times. I had a feeling of being constantly fettered all during childhood and adolescence.

"I remember as a small child having removed my clothes and reveling in the freedom, and admiring my chubby little bottom in a mirror, when caught in the act by a horrified maiden aunt, who read me a lecture on 'modesty' then, and at repeated intervals for several years. She also caught my older sister undressing before a window, and reacted with much indignation and scolded again about modesty, and the evils of dancing.

"I began to feel uneasily that there must be something very repellent about the human body, if it was so shameful to display it.

"Thereafter I fought to retain my clothes even at a medical examination, and have always had a horror of appearing undressed before anyone. I remember bursting in as my mother was dressing, and being shocked to discover that her body was different from mine, and fascinated by her breasts and dark pubic hair. Her reaction was to be very flustered and quickly put on a bathrobe, and I felt I had done something wrong in seeing her unclothed. Later I was disturbed to discover my own adolescent bodily developments, feellng I was very unattractive and that I would never allow anyone to see me undressed. This arose from my mother's own sense of shame at having been seen unclothed. Then there were reminders through-

out adolescence that 'ladies' kept their skirts down, their knees covered, etc. Tight pants or short shorts were outlawed because of 'what it would lead men to think.' Being a homely and unattractive child, I developed a keen sense of inferiority about my appearance.

"In later adolescence, helped along with make-up and pretty clothes, I blossomed out a little and found boys attractive, but I turned down offers of dates, feeling mother would disapprove. I remember the bitter envy I felt when all my friends were going to a school dance, and I wasn't, and looking in at the glittering decorations of the auditorium, which to me represented another world and all I was denied.

"So I turned to books and began to live vicariously through the adventures of the heroines of Shakespeare, the Brontes, Thomas Hardy, etc. These were often very macabre and unusual types, and I identified myself with them. As a child I had been enthralled by fairy stories, especially of beautiful princesses, and during adolescence I developed an almost fanatical interest in the Royal Family, whose princesses typified what I would have liked to have been. Therefore, I was completely disillusioned when actually seeing the Queen in person in Canada, seeing her not as a dazzling fairy tale figure, but a very ordinary young matron in a rather dowdy hat, accompanied not by a Prince Charming but a lean man with receding hair! I was shattered. My revulsion towards the male body goes back to a very early experience when I walked into our barn to find a dark, swarthy man using it as a toilet. He rubbed himself against me and I was terrified by the sight of his body, and straggled to run away. Even after I felt a subconscious revulsion towards all men's bodies, dimly connecting them with this frightening experience, and fearing even harmlessly intentioned male relatives. The dark hair especially fascinated and horrified me, and to this day, I feel an involuntary revulsion towards even a masculine-appearing woman with a dark 'moustache.'

"Then, too, I associated sex with elimination, particularly as the barn was also very 'horsy' smelling. It seemed that the bodily functions of sex and elimination were akin to animals.

"When being trained to use a pot, my older sister made fun of me and I regarded the whole business with disgust, and shame at myself for having to do it. During the treatment, I badly wanted to go to the 'loo,' but resisted calling the nurse, lest she find me revolting, and I apologized at length for having drunk so much tea beforehand. My mind then wandered to my present schoolroom, where all was gaiety and happy singing, until one very dirty, black, and smelly little West Indian asked 'to go to the toilet.' To me she seemed like the personification of excrement and I recoiled in annoyance and revulsion. Then I realized that there was a direct connection between my liking for the clean, polite children who used the more refined euphemism 'may I be excused,' and my dislike and annoyance with the smelly, little creatures who frequently asked in plainer English! The former never annoyed me, the latter constantly.

"Another surprising discovery made under the drug was my sheer terror of childbirth. I experienced my own birth, which was long and difficult, because I resisted leaving the warm safety of the womb and being ejected into the unknown world. I felt my mother's

contractions, and the pressure on my head, and blood trickling everywhere. The most outstanding memory was the feeling of anxiety, tension and apprehension in the atmosphere, until the doctor pronounced me all right. I remember the sight of torn flesh and a bleeding yellowish mass, and also a very strong odor of perspiration. All during the treatment, the sight of blood would return again and again to horrify me. My birth was followed by a period of great warmth, and peace and security, of suckling, and approval and affection. The arrival of a baby brother usurped my place. I kicked and sulked to gain back attention.

"Beginning school accentuated this feeling of lostness and aloneness, and I was terrified of the brusque old Scottish teacher, and the long grey corridors of the school basement. I remember being told a horrifying tale of an ugly old witch, being shown vivid illustrations, and warnings that this witch would catch us if we misbehaved. Later this witch image became transferred in my mind to that of a despotic God.

"In the sermons I was hearing there was a good deal of prophetic warning about the imminent end of the world, so I read of earthquakes and wars and disaster and violence as signs of the end, and developed a sort of cosmic fear. I also felt a morbid fascination for bizarre newspaper accounts of murders, and seeing violent motor accidents made a deep impression. Six people were killed in a level crossing accident near my home, and I remember the gruesome sight of six scattered bodies. I feared I would also be killed violently and was disturbed at the mention of people committing suicide. From my parents I absorbed a most negative and pessimistic view of the universe, and a distrust of life and people in general.

"My fears of childbirth were accentuated by hearing snatches of conversation by my mother's friends, in doctors' waiting rooms. Each seemed to have had most harrowing and gory experiences, and I remember my mother frequently remarking on how difficult my birth had been, and that I ought to be very good, because my birth had cost her so much pain. I felt this was most unreasonable, as I hadn't even been consulted.

"Then there was a frightening incident when my mother had a miscarriage, and I remember her sorrowfully walking in the garden afterwards. Before she went to the hospital to have a baby sister, she said that sometimes mothers died in the ordeal, and that we must be prepared that she might never come back. I was terrified and associated pregnancy with death. There was also much talk of blood transfusions and I became filled with horror of hospitals and blood, and especially the word 'anaesthetic,' which was associated with childbirth. Only last week I was terrified at the thought of undergoing anaesthetic and having wisdom teeth removed, and fearing I might bleed to death or have a blood transfusion.

Thus the Easter story of the sacrifice of Christ filled me with horror, rather than gratitude, because of references to the 'Blood of Christ.'

Through hearing pregnant mothers discussing symptoms, and later through reading books, I became aware of the symptoms of Pregnancy, and under the drug I experienced dizziness, nausea and a swelling of the abdomen—my fears of pregnancy translated into

physical symptoms. In the past months I had been dizzy and faint at times for no apparent reason, always worse when I tried to make a decision about marriage. Under the drug, whenever Richard mentioned marriage, my first reaction was panic, of sex and subsequent pregnancy, and of dying in childbirth. Having heard of many mothers who had died, I was convinced that I would too.

"At twenty, I became infatuated with an English boy whose Harrow-Cambridge background and *'savoir faire'* intrigued me. I knew my mother regarded this with disapproval but I met him frequently during the six weeks he was in Canada. Under the drug I experienced again the fear that tensed my muscles whenever 'necking' with him. When he returned to England, I was completely shattered and depressed for months as he seldom wrote and quite obviously rejected me as anything but an amusing interlude. This was the beginning of a series of infatuations which all ended in disillusionment. Most of them were with boys I met on holidays away from home. With them I responded very strongly physically, yet always with an involuntary tightening of muscles in fear and guilt. I always feared any mention of marriage, yet the endings of each affair left me with a period of near-despair. After twenty-one, I developed a mania for travel and flew to the West Indies often three times a year, or to California. At twenty-one I came to Britain on my own, as a 'declaration of independence' from home. Each holiday was an escape from the almost intolerable restrictions of living in my parents' home, and observing their unhappy marriage relationship. While having my own car and salary and theoretical independence, I still felt bound by unspoken restrictions, and also felt confined and frustrated in the world of my schoolroom.

"At twenty-one and in the years following, I discovered some books on theology which presented a totally different view on God from what I had been taught. These writers portrayed a God of love and compassion; under the drug the sun seemed to be rising and I had a sense of a kindness and love surrounding me. I reached out and longed to grasp permanently this marvelous sense of peace, but it was obscured by all the murky figures of the preachers and hobgoblins of my past. About this time I began to attend a church whose minister was intellectual and scholarly, and whose sermons influenced me profoundly; he presented a view of God I could entirely accept. Again and again, under the drug, the sense of utter peace returned as this period was recalled, with occasional flashes of guilt and suspicion that I was being disloyal to my mother's ideas. From then until now there has persisted a conflict in theology between a God of love and one of wrath; there was always a sense of utter incredulity about the thought of a God of love, and a terrific struggle to believe it.

"Then my mind turned to my years of combined teaching and University studies, and the frantic pace I lived in order not to think about my own life. Then I became ill and feared a nervous breakdown and finally had to go for a medical checkup. When the specialist recommended psychiatric treatment, I felt exactly like a cornered rat, fearing my whole facade would be stripped, and I would be found out for what I was, someone eternally playing roles to get the attention and approval I so desperately wanted—always trying to have better clothes or more exotic holidays, or higher exam marks

trying to keep up a gay and nonchalant exterior, while mounting despair about everything was hidden underneath.

"Then my mind went back to two occasions when I had been bridesmaid for girl friends, and I recalled a feeling of great sorrow, because I felt I would never become a bride; that I was unloved, and unlovable.

"Lastly, under the drug, I saw a pictorial representation of my present conflicting state of mind, with my thoughts as moving things dancing about in a crazy senseless pattern.

"On one hand, I felt so drawn toward marriage and motherhood. The nurse had placed a pillow on my arm and for a few moments it seemed as if I were holding my own baby, enveloped in an exquisite happiness and peace.

"When thinking of Richard there was at first a feeling of utter contentment and security, later interspersed with doubts and fears, as marriage was spoken of. Great happiness seemed almost to be within my grasp, yet I feared to reach out and take it. I remember seeing him arrive at London Airport and the old involuntary bodily tightening of fear, then a sense of panic, and the thought 'I can't go through with it.' Then surveying him critically and trying to find some excuse to rationalize about, and deciding to myself that he wasn't handsome enough! Yet a wiser and more sensible person seemed to be evolving from all this conflict, reminding me that I had never left the world of fantasy and fairyland behind, where every prince is dazzling. It seemed that my development had been arrested at the fairytale stage, and I was still trying to identify with the role of the princess who finds nothing less than perfection. Because Richard was 'ordinary' looking, and had not measured up to this role of the fairytale hero, I had chosen to overlook all his good qualities and reject him.

"Then I realized how much I had used this 'illness' as an excuse not to make decisions, and wasn't altogether sure that I wanted to be 100 percent cured. If cured, I realized I must face responsibility and make decisions. Coupled with this was an ingrained suspicion and distrust of psychiatry, and a fear that I would emerge as an atheist. There were also fears of insanity and suicide, as I remembered hearing it was sometimes compulsive when one felt depressed. There was also a fear of sharp knives and blood.

"I felt a terrible dread of growing old and dying. My body seemed to wither and shrink, and I lay with my hands folded, as in a coffin. Then I was in our school staffroom and looking at the assemblage of ghastly spinsters and seeing in them the personification of my fears of being an old maid!

"I was appalled to discover that my attitude toward my friends was superior, cynical and supercilious. I was completely detached from everyone, always fearing any deep involvement. Yet under the drug, my sense of humor caused me to smile at my own attitudes, and there was an increasing feeling that I was moving towards a right perspective on life, and that the treatment was being successful. Even as the drug lessened, I began to feel that I could handle all the material and learn from it.

The following morning I felt relief at being an 'ordinary' person, and had a feeling of great trust and confidence that I would eventually

emerge from this, happy and well adjusted. Yet I still felt that there was more to be released in the next session."

At the time of writing, she has had six LSD sessions and eight psychotherapeutic hours. She now states that she feels herself to be a different, and much more mature person, who really understands herself for the first time. She is now looking forward confidently to marriage this summer and I am quite satisfied she will make a mature and happy wife and mother. She has worked through her problems much faster than most patients, due to her youth, her high intelligence and good motivation.

Neither in my clinic nor in the National Health Service open psychiatric hospital, where I am a part-time senior specialist, are we equipped to deal with people who become violently disturbed. In Great Britain, this form of therapy is practical only inside a mental hospital and even there I doubt its ethical justification. LSD is a powerful drug and with the sort of patient I select, a dramatic "crash-program" is dangerous and, I believe, unethical. I do not believe one is justified in *perhaps* precipitating a psychosis and, as a physician, support the old Roman slogan *"Nil Nocere"*—"Do no harm."

Nearly all my patients are earning their living or keeping house. It is therefore unwise to put them out of action for an indefinite period, and can even result in one's being prosecuted.

Patients know emphatically when they have worked through their problems, and really feel at peace with themselves, and with their parents. I am aware of only one patient, with a rubber fetishism, who admitted he refused to face up to his problems because he enjoyed the effect of the Ritalin so much. He tried two sessions with Ritalin and then broke off treatment. One other patient, with a marked mother attachment, has broken off treatment prematurely, as he did not want to face his problems, but the great majority complete their therapy completely and permanently.

Research Results

My professional life, of which I spend approximately half in my private clinic, and half as a senior-consultant in a psychiatric Day Hospital under the National Health Service, has made it impossible to conduct the traditional double-blind research technique.

The double-blind procedure is applicable when a treatment is administered to a patient, but not applicable when the treatment takes place with the patient's cooperation. To match patients according to age, sex and social status is totally inadequate if one is concerned with the complete life history of the individual, and his social relationships in marriage and work. Each individual is a unique entity, and can only be helped if so regarded. I also question the ethics of using human beings as guinea pigs, and do not believe that any patient would turn up week after week to have an injection of distilled water.

An analysis of 43 patients treated privately in 1962, i.e., three years ago, shows that 34 are completely well and socially well adjusted. Six are improved, one abandoned treatment, one had to leave for Africa before

treatment was finished, and one failed to respond satisfactorily, so treatment was abandoned.

CONCLUSION

After 12 years of work with LSD, it is my belief that we have a most valuable therapeutic tool, when used on the right sort of patient, under the right conditions, and by a psychiatrist with real knowledge of psychodynamics and the technique of using the drug.

In conclusion, I would like to quote from Freud who wrote, in 1938, as follows:

> "... But we are here concerned with therapy only in so far as it works by psychological methods, and for the time being we have none other. The future may teach us how to exercise a direct influence, by means of particular chemical substances, upon the amounts of energy and their distribution in the apparatus of the mind. It may be that there are other still undreamt of possibilities of therapy."

It may well be that treatment with LSD, in combination with Ritalin, fulfils this prophecy and that its use in appropriate cases of neurosis and psychosomatic illness may prove a major advance.

DISCUSSION

Dr. Rinkel: Do you tape-record the sessions?

Dr. Ling: I don't use tape recorders. This is a complicated problem. I think tape recorders are more acceptable in North America than they are in Europe. World War II was closer to many of us in England than it was to people in North America. I think this is something that has helped my prejudice against it. I take the view that I encourage people to use their guts and not their talking. And I think they feel that they've got to talk if you use the tape recorder during the sessions. One should help them break down, flow with it, like a log on a river. As regards music, I did think about having some music, but this raises so many problems, including the different types of music that people like. If they want to bring a record-player, they can. I mentioned one patient who was quite musical, a director of an advertising agency, who admitted that he got an enormous, erotic experience out of Wagner. He eventually agreed that this was rather a waste of time and that there were other ways of having erotic pleasures as well as this way.

Dr. Pahnke: As a practical matter you indicated that you feel it was better in your situation in England to have the people work the next day. For the sake of argument, if we could pose an ideal condition where they wouldn't have to work, do you think that would be better for the patient—to have time to work through some of the things that

came out of the session, rather than having to get right back in the normal routine?

Dr. Ling: Yes, that is borne out by the case of a wealthy American who hadn't worked in years. Others go back to work, partly because the ordinary man will take one evening off in a fortnight. One civil servant with us, who was of pretty high-level status and ability, said when I asked him the next day how he was getting along, "Well, I work at about 50 percent of my capacity the day after treatment, but I'm so much better the rest of the week that I am worth 50 percent more, and the government is still paying me the same." Very seldom did I have difficulties.

Dr. Godfrey: Would you say something about how you decide when you come to the optimum level, or optimum dose, of LSD and Ritalin?

Dr. Ling: This is primarily for the patient to decide each time. To me it is very important. Sometimes I will say the following morning, "Do you think that was about the right dose?" And sometimes it is hard for them to pull themselves together enough to talk about it. Or they might say, "I'd like a bit more; there's something I feel, I couldn't get deep enough." Sometimes they will say, "Oh, for the first hour or two I was sort of swamped by it; cut it down."I think the patient is the right guide for this, but this is a slow, not what you might call a crash program. As you can gather, in my work, our work, we jolly well can't skim the cream off the top of society. We also have a lawyer who comes to me. I am quite aware of what is going on about this drug, and the Food and Drug Administration's position, and so on. We also have a good deal of opposition, often, from the medical establishment. Chief psychiatrists, in the main, teaching in hospitals, say it is "bunk," anyhow. We also get our fair share of prejudice from the analysts. It appears not unlikely that we get some of the same opposition that you do.

I use Ritalin on about two-thirds of the people. We usually start with 20 mg. I used to use it intravenously, but in the last year or so I have switched over and have given it intramuscularly. Subsequently this will be quite enough for a patient in the evening to half-past eleven or twelve, and they have had enough by that time. Again I repeat that my technique is a very permissive one; if they want to hold my hand, they can. If they want to cry on my shoulder, they can cry. I don't get into bed with them, although the parson s wife asked me to, the other day. I accept this. And lastly, I would say, if necessary—supposing at eleven o'clock they say, "I would like to have a look at something else there"—I'd give them, say mg Ritalin. I have had no trouble except with the two cases I mentioned. The other point I would make with us (and it's the same in North America) is the cost. The cost of a complete analysis is pretty high. A great majority of the people I treat, quite frankly, can't afford it. Well, I mentioned to you the chap who got a tremendous erotic feeling from Wagner. He had already had an analysis. He went to his analyst late in the morning, four days a week,

for three years. This cost about five thousand pounds. But it is an expensive game for an ordinary family man, although we have a tax arrangement in our country, too. We can't charge medical fees to a tax deduction. This is a very real problem for the ordinary lawyer or the ordinary doctor.

Dr. Savage: You mentioned that your approach is essentially permissive. You say that if the patient wants a lower dose, you give him a lower dose, but if he wants Wagner, you treat this as a resistance against his hostility and aggressions. How do you know that if he wants a lower dose this also isn't resistance?

Dr. Ling: I do my best to establish fairly strong rapport. By that time, we have gotten along pretty well. I'm not convinced that breaking through resistance is in proportion to the dose. I don't think this applies to everybody. One of the most brilliant cases I ever had was a girl with migraine for years who improved markedly in four sessions. The other point I would make is that I never commit myself when I start a patient and say how many sessions it will take. This raises tremendous problems. They hang on to that and say, "You said twenty sessions."

Dr. Fremont-Smith: Dr. Ling, you wouldn't mean to imply, would you, by any possible chance, that at times you use good clinical judgment?

Dr. Ling: I do my best to use good clinical judgment.

Dr. Fremont-Smith: I think it well worth mentioning that clinical judgment does have a role and that you cannot measure it by milligrams, milliseconds or milli-equivalents. It's based on a great many factors.

Dr. Ling: I think it is experience with us. The dosage varies enormously.

Dr. Fremont-Smith: And you make a good judgment about it.

Dr. Ling: And cooperation. And I have not ever been satisfied that somebody is trying to dodge facing up to things. You have to face up to something by reducing the dosage. I am guided by what they say.

Use of LSD 25 in Personality Diagnostics and Therapy of Psychogenic Disorders

Stanislav Grof, M.D.*

The value of LSD 25 in clinical practice has become in recent years one of the most controversial topics in contemporary psychiatry. ** On one side, enthusiastic voices declare that LSD is an excellent tool for exploring profound and hidden recesses of the human psyche, and that psychotherapy with the help of this drug is a real panacea for psychogenic disorders, the therapy of the future. On the other side, many authors deny that the diagnostic significance of LSD could be greater than that of alcohol and other unspecifically disinhibiting drugs. Others proclaim that LSD is of little use in therapy. There exists also a tendency to stress the danger of complications and the risk of misuse. Some even advise withdrawal of LSD from psychiatric clinical practice. The existence of so many deeply divided opinions reflects a lack of detailed knowledge of all the determinants and complexities of the action of LSD. This is, moreover, complicated by the fact that this drug is prone to evoke in scientific workers, strong emotional reactions, which can be projected and expressed in scientific terms. The less detailed and exhaustive our knowledge, the more open is this field for the last mentioned mechanism.

* Research Psychiatrist Research Center, Prague.

** This paper summarizes the author's experience in seven years' of experimenting with LSD. An extensive dissertation in two volumes entitled "LSD 25 and Its Use in Clinical Practice," written in collaboration with Z. Dytrych, M.D., served as the basis for this presentation. For the purpose of the present paper only those parts of the dissertation were used which were elaborated separately by the author, or those where his participation was essential. The work was carried out in the Psychiatric Research Institute in Prague. It had, however, the character of an orientative clinical study and was not a part of the planned research program.

The paper refrains from quoting the literature pertinent to the separate sections. The extent of the problems discussed is so broad that the proper historical and actual review of them would far exceed the possible scope of this presentation. The first part of the extensive dissertation catalogues and categorizes most of the literature published on all possible aspects of LSD, and is available in a German translation. Interested participants of this conference will be able to find all the important data from the literature pertaining to the sections of this paper in the German-language edition—S.G.

The following presentation is an attempt to summarize the author's experience in three years' experimenting with LSD in the frame of a clinical and experimental study of its effects, and four years of exploring the possibilities of its applicability for diagnostic and psychotherapeutic purposes in dynamic psychiatry. Because of the conflicting views and lack of detailed knowledge, parts dealing with therapy are preceded by sections discussing the determinants of the character, contents and course of the LSD reaction. It is the author's belief that a detailed knowledge of all the factors influencing the LSD reaction, and the laws governing it, is a necessary prerequisite for scientific therapy. Only if these factors are sufficiently well known is it possible to delineate all the conditions of therapy which are to be maintained; to state indications and contraindications; establish rules of therapeutic procedure; and to understand the risk of complications and their nature, etc.

This paper aims at promoting our understanding of some aspects of the LSD reaction and at establishing certain more or less standard conditions for systematic psycholytic therapy.

1. Description of the Experiments

The majority of experiments pertaining to this study was carried out in the Department for Research in Neuroses, a department of the Psychiatric Research Institute in Prague. The chief aim of this Department is an intensive study of interpersonal relations, the contemporary research topic being the problem of persistence and reproduction of maladaptive patterns in interpersonal relations of neurotics. The whole character of this department is subordinated to the exigencies of the research. It has a mixed ward with 17 beds, 9 for females and 8 for males. The patients are selected according to distinct criteria: there is a bias toward patients with higher than average IQ's and those whose parents both are able to cooperate. Only psychogenic disorders are accepted. Neuroses of all kinds, character disorders, some borderline cases and psychosomatic affections are the main diagnoses. There is a distinct and purposeful prevalence of fixated and chronic neuroses, which are suitable for the study of persistence. Most of them were treated unsuccessfully by different methods of psychiatric therapy.

The investigators tried to create a milieu which would model, approximately, the common life conditions, and in which the patients could display their various types of interpersonal patterns. There was a high degree of tolerance and permissiveness. This basic approach was departed from only in exceptional cases.

After admission, each new patient was examined in a way common to psychiatric practice. Afterward, with his doctor, he underwent a thorough investigation and detailed reconstruction of his interpersonal relations, from early childhood to the present, according to a special scheme.

The chief therapeutic means in the work of the ward was individual and group psychotherapy. The group sessions took place every morning for one year, and after that, three times a week. All the patients of the ward

were present at one time and both doctors were present at most sessions. The group arrangement was an open one. Newly admitted patients came into the group and dismissed ones left. The technique was that of indirect interpretations according to common rules of dynamic psychiatry. In the individual sessions specific problems of each patient were dealt with. We also worked purposefully with the relatives of the patient. The number of hours dedicated to one patient per week outside the group work was two to three. As far as other methods of therapy are concerned, they are limited to a minimum because of our research objectives. If necessary, analgesics and hypnotics were used; in some cases, antidepressive and antiphobic drugs were employed. Other types of therapy were not applied.

During the first months of our therapeutic and research work, which was primarily focused on the study of interpersonal relations, a special atmosphere was created. The patients repeatedly stressed that for the first time in their lives they were in a milieu where they were accepted and understood, and where they felt at ease. Very typical was a tendency toward mutual help, a striving to understand not only one's own problems but the problems of the others, and to learn the general rules of human behavior.

The reason for a relatively detailed description of the circumstances and frame of administration of LSD is my persuasion that factors other than pharmacological play an extremely important part in the determination of the LSD reaction. If we want our data to have a more general validity, we must define the conditions under which they were obtained.

The experiments were begun two months after establishing the department. The use of LSD for diagnostic and therapeutic purposes was included in the regime of the ward because of practical and theoretical reasons and concerned both the routine and research work. As far as was practical, we tried to accelerate the psychotherapeutic progress, since it was suggested in the literature that LSD intensifies the psychotherapeutic process and mobilizes efficient mechanisms. In the research work, we wanted to use the experience showing that LSD intensifies the dynamics of interpersonal relations and helps to reveal their deeper levels. Last, but not least, we felt that the structure of our department, the organization of its therapeutic and research regime and the general atmosphere were extraordinarily favorable for a trial that would contribute information regarding some problems connected with LSD. A thorough knowledge of the patients, not only from the intrapersonal point of view, as is common in psychoanalytical practice, but also from the point of view of the dynamics of their interpersonal relations and social interaction in the hospital, and in their natural relations, gave us a unique opportunity to judge the pathoplastic aspect of the LSD reaction, i.e., what are the factors which influence its character and course; which part of the personality becomes reflected in the symptoms of the intoxication; which moments can have a modifying effect, etc. A further advantageous circumstance was the fact that psychotherapy, individual and group, and work with relatives, was the chief therapeutic method. This formed favorable conditions for the verification of the usefulness of LSD as an adjuvant in individual and group psychotherapy, as well as in a combination of both.

As far as details of the application of LSD are concerned, we tried many modifications. The use of LSD in the treatment, which we developed after months of trial and error, will be presented at the end of this paper. The problems of some previous modes of application will be mentioned. In this connection it is only necessary to state that the material of the main part of the experiments can be divided into two main groups. The first comprises the data obtained from experiments with 72 patients, who had LSD two to five times. This material helped us understand some of the more superficial aspects of the LSD reaction. The second group, which revealed some essential aspects, includes the data from 15 patients who underwent a psycholytical series of 16 and more experiments.

In addition to the foregoing experiments, the author carried out more than one hundred LSD sessions in different frames of reference. The first part of these experiments belongs to a period of three years, when he took part in a research team headed by Dr. Vojtechovsky in the research institutes in Prague-Kre., which engaged in a comparative study of different hallucinogenic drugs by a multidimensional and dynamic method. Another group experimented with LSD as an adjuvant in psychotherapy in individual sessions, in ambulatory patients, and not in an especially organized department. It is also worthwhile to quote autoexperiments of research workers, nurses and students of medicine, who used LSD as a means of gaining a more appropriate insight into the psychic world of mental patients. The remaining experiments were carried out with artists, painters, sculptors, musicians, and the members of a team of film workers, who participated in the production of a film about experimental psychoses. These experiments helped us to learn the importance of the frame and milieu of the experiment for the determination of the LSD reaction, but were, of course, of little use as far as an understanding of its detailed dynamics is concerned.

II. Factors Influencing the Character and Course of the LSD Reaction

1. *Pharmacological effects of LSD*

A. Invariant components of the effect of LSD.

In all the experiments of this study great variability of the clinical symptomatology was evident. This was the case not only in experiments with different people, but also in experiments with the same patient. Even if several of the manifestations of the intoxication occurred relatively frequently, there were only a very few symptoms that could be considered as really invariant, constant and typical manifestations of the LSD intoxication. Even in these, few relatively standard symptom irregularities, oscillations and modifications were found.

Most typical changes can be comprised under the general concept of Rausch or of a basic psychotoxic syndrome in Leuner's sense. In a great majority of experiments a general tendency to perceptual changes, qualitative changes of consciousness in the sense of protopathic transformation, and regressive manifestations in thinking and intellectual functions could be detected. Striking also was an over-all intensification of the psychic

processes and nervous processes in general. A characteristic sign of the intoxication is the fact that most phenomena are determined and overdetermined by the elements from the individual history of the experimental person. The occurrence of the phenomena is governed by specific laws, as will be shown in following sections.

As mentioned above, we found many exceptions in these basic elements of the symptomatology of the LSD reaction. We can speak, for example, only about a general intensification of the proneness to perceptual disturbances. Optical changes do not regularly dominate the clinical picture. Many patients do not present any disturbances of optical perception, but experience, during the course of the experiment, a massive somatization to unpleasant physical symptoms; for example, intensive feelings of a somatic disease, or torturing pains. Other forms of somatic experience could be observed, as for instance, practically continuous orgastic feelings. Repeatedly it could be observed that ways of experiencing LSD reaction exist which prevent the occurrence of perceptual changes; for example, intensive psychomotor excitation with inner tension, massive anxiety, aggression, disgust and catatoniform stupor, etc.

Perceptual changes can occur in any sensory area. One of the most typical and frequent invariants of the LSD effect represents elementary visual phenomena like after-images, intensification of entoptic phenomena, abstract and geometric figures, etc.

Even the subjective feeling of intoxication connected with a particular feeling of inner trembling, which belongs to regularly occurring symptoms, can undergo, in a certain range of doses, marked changes. Very interesting phenomena can be observed from this point of view in persons who normally have problems with maintaining self-control. They can at the expense of extreme effort resist for a long time doses even to 500 mcg and indicate that they are sober and without symptoms. Episodes of this kind occur during the intoxication as one way of defense against the manifestation of extremely traumatic material. The breaking through of this defense leads to a strong feeling of intoxication, anxiety, and to unpleasant somatic symptoms. It is interesting to note that phenomena of this kind usually prevail in first experiments of a psycholytical series, when they dominate the picture, and later appear only when traumatic material emerges.

As far as a general intensification of the nervous processes is concerned, it is interesting that it comprises the phenomena of various origins. These are quite regularly some pre-existing psychogenic symptoms from the present time or from variously distant periods of the patient's life. On the other side, even different pains of neurological origin become activated, such as discopathy, posttraumatic and postoperative changes, etc. One patient's symptoms resembled a fit of psychomotor epilepsy which she could not distinguish from those she had had previously. In this connection it is interesting to note the so-called vegetative symptoms which will be discussed later in detail. All the clinical experience with the use of LSD in psychotherapy supports the view that these symptoms do not represent an effect of the drug *per se,* but are the result of toxic activation or

latent or even manifest organ neurotic symptoms. They are a regular concomitant of the emerging of traumatic material.

As far as the determination and meaningfulness of the symptoms of LSD intoxication is concerned, I detected often that an originally unclear and incomprehensible content was later explained, when the patient revealed material which he withdrew at first. Especially did it show in repeated experiments of a psycholytical series to be an integral part of a very traumatic constellation, which was experienced previously in an incomplete and fragment-like way.

B. Significance of the dose used in the experiment

In connection with the problem of invariant components of the pharmacological effect of LSD it is interesting to note the significance of the dose. It is not easy to judge this problem because of the variation in the clinical picture and in the inter- and intraindividual variability. The experiments of this study repeatedly supported the clinical experience that the intoxication by small doses of LSD—eventually the termination period of experiments with higher doses—is characterized by an intensification of the pre-experimental character traits and especially of the basic emotional reactivity. At the same time occurs a manifestation of latent psychogenic symptoms and an intensification of the pre-existing ones.

Very high doses of LSD, above 500 mcg, evoke quite regularly extreme psychotic episodes, in Leuner's sense, as conditions of catatoniform excitation or stupor, affective-deliriant states with disturbances of consciousness and motor stereotypes.

Medium doses appear both from the diagnostic and therapeutic point of view as the most interesting. They are characterized by an intensive psychotic experience with manifesting of different deeper levels of personality. In this area the pharmacological effect of the drug is combined with the effect of pathological emotional constellations in the sense of Leuner's transphenomenal dynamic systems. During the activation of some relevant dynamic systems, arise episodes of extreme psychotic experiencing which are determined by the patient's history and which indicate that very important and heavily emotionally charged material is dealt with.

AH that was said about low, medium and high dosage is very relative and is anything but a fixed rule without exceptions. It was already mentioned that certain types of patients can resist doses as high as 500 mcg without the typical signs of LSD intoxication. Similarly, occasionally an experimental person can resist a relatively high dose, if he posed this as a task for himself for different reasons; to fight with the therapist or with the drug; to show his personal strength; to endure more than the co-patients. Another cause for such an attitude can be insufficient instruction of the patient and the lack of full agreement and cooperation. In all these cases it is possible to resist high doses a long time. The LSD reaction does not get its normal course unless the motives of resistance are analyzed and interpreted. The sudden sobering which occurs eventually

in any period of the intoxication, without regard to the dose, when traumatic material emerges, was often observed.

The experiments of this study supported the view that practically none of the manifestations of the LSD reaction, with a relative exception of invariant components, correlates directly with the size of the dose. The dose can only co-determine which level of the personality will manifest itself in the symptomatology of the clinical picture.

It is possible to summarize that only very few symptoms which would be quite constant and invariant, can be considered as pharmacological effects of LSD *per se.* The unusual richness and variation breadth of LSD reactions is evidently caused by a complex of influences other than pharmacological.

The experiments repeatedly show how closely the manifestations of the LSD reaction are connected with the personality structure of the subject, with his pre-experimental symptomatology and present and past life situation. The formation of the clinical picture is also deeply influenced by the personality of the experimenter, his ability for empathy, his tolerance and permissiveness or, on the contrary, his psychological idiosyncrasies, his motivations, his approach to the subject and the quality of the therapeutic relationship, etc. Very important and insufficiently acknowleged roles are played by the milieu and the frame of the experiments. I will try briefly to describe and illustrate the most striking and interesting observations in these categories.

2. The experimental person's part in the formation of the symptomatology of the LSD intoxication

In this connection we can take into account factors of biological character, the personality of the subjects, their life situations and, in the case of psychiatric patients, also their symptomatology and diagnostic classification. From our sample there is little to say about the influence of biological factors. The range of age was limited deliberately, for research reasons, to such an extent that it was not possible to observe whether there exists a correlation between age and LSD reaction. Constitutional type did not seem to play an important role. Affective types of experiencing and schizophreniform symptomatology of the extreme psychotic periods occurred both in pyknics and asthenic or athletic persons. It was possible to find biographical determinants for these manifestations. Repeatedly, however, arose the impression that the female half of the sample was more sensitive towards the effect of LSD.

Much more important and interesting determinants are connected with the personality of the experimental person and the eventual symptomatology. The practical significance of this fact consists in the possibility of using LSD for the exteriorization of symptoms and as a test of personality. In this respect several interesting circumstances could be detected as far as the attitude to the experiments, the symptomatology of the intoxication and its clinical course are concerned.

Among the patients who tried to avoid the experiments or to delay

them for a long time but who agreed to undertake them only after persuasion, and who ingested LSD with great anxieties and fear, were persons with very typical problems. They spend normally much time and energy to maintain control over their instinctive tendencies, which are of an aggressive or sexual nature. They fight with these forces and have feelings of guilt and self-reproach because of them. These persons try to avoid all situations which threaten to reduce conscious control: abuse of alcohol; chronic fatigue and sleep deprivation; hypnagogium; febrile diseases and orgasmus. These patients soon discover that LSD generally has a disinhibiting effect and that it reveals the unconscious. They classify this drug as a risk and potential danger for them.

An interest in LSD and a tendency to repeat the experience (during individual experiments) was very marked in intellectuals with psychopathic traits who are disappointed with their ordinary lives and look for unusual experiences. Sometimes it was the pleasurable character of the experience which led the subject to wish to repeat the session. In patients who are strongly bound to the doctor, the motivation for the experiment can be strengthened by the fact that they can thus spend a long time with him. Some of the patients used subconsciously, and even consciously, the frame of the experiment as an opportunity to manifest some of their tendencies which would be otherwise unacceptable.

All the mentioned factors can have significance, if LSD is administered a single time. Where it is given within the frame of a psycholytical series, there arises quite regularly after the first sessions a spontaneous desire to explore one's mind and a strong tendency to make progress and integrate one's experiences.

As far as the relation between the symptomatology of the LSD intoxication and the clinical diagnosis is concerned, most interesting are the findings in patients with obsessive, compulsive and phobic manifestations. These patients belong to those who are afraid of the experiment in advance and delay its realization. All the symptomatology is often restricted to a fierce fight with the effects of the drug and an extreme endeavor to maintain self-control. The patients have practically no disturbances of optic perception and develop a massive somatization. Their verbal expressions have mostly the character of complaints about the unbearable somatic condition, alarm at losing touch with reality, and also of negative ethical self-esteem. Such experiments are usually followed by intense fatigue.

In hysterical patients the character of the intoxication is substantially different. The psychosensoric disturbances are extraordinarily rich with a predominance of optical phenomena and kinesthetic sensations, often of a sexual character. The pictures change quickly; they are colorful and plastic and often of a scenic character. Elements of daydreams and of the fantasy life of these patients become visualized and the pictures often have a wish fulfilling character. The scenic course is disturbed only if the Patient approaches the manifestation of some traumatic and pathogenic emotional constellation.

It was repeatedly observed in the course of the experiments that pa-

tients with serious latent or manifest homosexual problems resurrect unpleasantly experienced episodes. These are deep and intensive and can lead to panic reactions. Striking also was the tendency to paranoid perception and paranoid interpretation of the experiment in these patients.

As far as the character of the intoxication in depressed patients is concerned, no constant correlations could be found. In neurotic depressions there sometimes was a deepening of the depression, sometimes to a distinct affective lability, where depressive mood and weeping alternated with euphoria and convulsive laughing. A depressed patient often experienced the experiment in a euphoric way and showed a subsequent improvement. As far as deeper depressions were concerned, with a suspiciously endogenous component, a marked intensification of the depression, lasting several days, could be observed.

Generally it can be concluded, however, that the relationship between the diagnostic group and the character of the LSD intoxication does not seem to be of such a refinement as to represent a contribution to the establishment of diagnosis, as realized by conventional means.

The situation is quite different as far as the problem of symptom exteriorization and a deeper understanding of the subject's personality is concerned. In this aspect LSD appears as an extremely valuable tool unrivaled by any of those used formerly.

In experiments with lower doses, and in the terminal phase of those with higher doses, a marked intensification of the pre-experimental symptoms could be observed, as well as manifestation of former symptoms found in the patient's anamnesis since childhood. There also occurred new phenomena, but manifesting an analogical neurotic structure; some of these represent the so-called "vegetative phase."

Under these conditions, there takes place a manifestation of some important aspects of the personality, which are normally not so clearly discernible; or the subjects try to hide them. This group includes relatively superficial phenomena which have significance on the level of common social interaction. The activation by LSD helps us to see them very sharply. The great variety of phenomena belonging to this group can be divided into several typically occurring categories.

The first category includes manifestations regarding *emotional reactivity,* which is quite regularly intensified. Most frequently a distinct emotional lability was observed with alternations of depressive and euphoric periods. This occurred in persons who even normally had a tendency to swings of mood. Similarly there was a deepening of other mood qualities (euphoria, depression or anxiety). A very typical manifestation of this phase for many neurotics is a torturing feeling of isolation and loneliness, lack of relevant emotional contacts and a need to be useful to others. Positive and negative feelings toward persons and various objects are enhanced, as well as pre-existing ambivalence. In persons who have experienced a marked emotional deprivation, an intense need for love can arise, infantile in character with anaclitic elements.

The second typical category comprises *problems connected with self-esteem of the subjects.* The most frequently observed phenomena here

are agonizing feelings of inferiority concerning physical appearance, intellectual qualities, moral aspects and others. Also, intense guilt feelings and self-accusations were very frequent. Other typical manifestations are feelings of superfluousness in the world, comparing oneself unfavorably with others and stressing their right to be preferred. Less frequently opposite tendencies are stressed such as exaggerated boasting; feelings of sovereignty; authoritative behavior. They cover basic inferiority feelings and it is not difficult to understand their compensating character.

All these phenomena may characterize the experimental person. They either can be experienced and communicated verbally, or become determinants of perceptual changes, expressed in a symbolic way. Often a projective mechanism is used and the experimenter, or other persons, are illusively transformed into a representation of one's critical ego.

Another important category of phenomenon is an intensification of typical forms of the patient's *social reactivity*. This can be an enhancement of sociability with a constant search for contact, a tendency to social jokes and different ways of attention-getting. Sometimes even a search for physical contact appears. The erotic component can come to the fore, evidenced by coquetry, minor sexual aggression and seductivity, or verbal expressions with obscene topics. In a similar way, withdrawal reactions are intensified and often the significance and mechanism of this reaction can be revealed. Sometimes a conflict between a fear of loneliness and fear of others becomes accentuated. Interpersonal maneuvers concerning dominance and submissivity are equally enhanced, typically connected with aggressiveness. Also, passive-dependent behavior, lack of self-sufficiency, and irresolution can be accentuated to the point of caricature.

From further manifestations, a fight for self-control was heightened to extremes. As already mentioned, this occurred typically in patients who have problems with self-control even in normal life. In patients with a rich inner world that is used as a shelter against traumatizing reality, the inability to experience fully either the inner or outer reality can be accentuated with a disagreeable blending of the psychic elements of both.

A completely different situation often occurs when higher dosage is used. After reaching a certain limit, which is individually determined, a striking reversal can be observed. Instead of formerly apparent superficial elements, deep tendencies of the opposite character now appear, which are normally bound by means of different defense mechanisms. Whereas the first mentioned phenomena permit an intensified knowledge of the more superficial and manifest aspects of personality from a descriptive point of view, the latter reveal the dynamics of personality and contribute essentially to a dynamic diagnosis. Most often this reversal was observed in extremely submissive and anxious persons who, in normal life, avoided any conflict, were strikingly decent and polite in an exaggerated way. After surpassing the limit there may appear in them, after a certain period of excessive fight for self-control, marked aggressiveness, with destructive tendencies. Very often a conversion of a similar kind was observed in persons who normally had very strict sexual inhibitions with Victorian ten-

dencies toward ascetic manifestations. Here the sexual behavior often almost dominated the clinical picture, or at least played a very important part. These patients showed coquetry, seductive traits, social exhibitionism with an erotic taint. Obscene expressions or even sexual aggression were manifested. Several times sudden changes took place in persons who normally had strong inferiority feelings. They developed megalomaniacal ideas and manifestations, expressed either verbally or in a symbolic way. In forcefully authoritarian persons, where this trait had a compensatory and defensive character, this phase of the intoxication revealed deep feelings of insecurity, low self-esteem and often childish helplessness. Similarly, hypersensitivity, vulnerability and intensive emotional reactivity appeared in persons with a manifestly cynical attitude to the world, derisive of human feelings and degrading all values. In two cases, serious doubts about their masculinity and a fear of homosexuality were observed in male patients who displayed superior feelings toward women and spoke of them with disrespect and irony. Extremely rational persons, in whom this orientation had a defensive character, in this phase showed an intense emotional life, vulnerability or even a tendency to engage in mystical and religious thinking. To the contrary, patients educated in a conflicted, bigoted milieu, manifested anti-religious and even blasphemous tendencies.

A more detailed study of the personality of the subject can be realized by a thorough analysis of the symptoms of the LSD intoxication by means of free association. Repeated clinical experience showed that the symptoms are highly specific, reflect the subjects' most important emotional problems, and have a close connection with past and present life situations. Thus analyzed, the phenomena can help in differentiating relevant material from the irrelevant, since the patients select topics which have the strongest emotional charge. The symptoms are on different levels, determined by multiple factors, and concentrate, in a symbolic abbreviation, topics more relevant emotionally. The associations of the subject lead very quickly to the key problems of the personality.

In a series of experiments, it became clear that the most important contribution of the LSD reaction toward revealing deep layers of the personality is the manifestation of specific constellations which Leuner describes as transphenomenal dynamic systems. The emerging of these constellations has a typical influence on the course of the psychosis; it enables the therapist to comment on their presence and pay attention to them. With medium dosage, the emergence is preceded by emotions and other manifestations unexplainable by outer stimuli (panic anxiety; disgust, nausea or emesis; aggressiveness; feeling of one's dirtiness; loneliness; pains; dyspnea, etc.). Afterwards, otherwise unusual phenomena appear in the clinical picture: visions are perceived as fragmented and in wild chaos or whirl; affects appear as dissociated from contents or motor automatisms; and catatonic excitement or stupor replace the usual symptomatology. These manifestations are frequent with higher dosage. If they appear with lower dosage, the presence of a heavily emotionally charged transphenomenal system is indicated. The described constellations are of prime importance for the formation of the symptomatology,

as their influence shapes the contents of the whole LSD experience. They have moreover a basic effect on the formation of some character traits. Their abreaction and living-through has important consequences for the patient's behavior and his life attitudes. LSD seems to be the only known means (perhaps with the exception of some other hallucinogens, especially psilocybin and mescaline) for revelation therapeutic reduction and elimination of these constellations.

Even if these constellations have, in terminal reliving, the character of a traumatic event from childhood or infancy, which often can be objectively verified, in interviews with relatives, as reflecting reality in fascinating detail, the intensity of defense and strength of abreaction, as well as far-reaching therapeutic changes connected with reliving, suggest that the situation is much more complicated. On the basis of analysis of clinical material derived from successive reactions combined with a thorough knowledge of the patient's history, a tentative explanation can be offered. A single traumatic event can be of such significance only if it occurs against the background of a specific family structure, and if it is reinforced in later life by many occurrences of a similar kind. Thus the whole, complicated and ramified traumatizing experience is able to be expressed in the sense of a *pars pro toto.* A specific constellation which originated in this way can have, moreover, so great an influence on the patient's attitudes and behavior that the patient, as a result of strong anticipations and *a priori* attitudes, evokes from his human environment, complementary counterreactions and thus actively helps to reproduce the original traumatic situation. This continuous reinforcing of the original pathogenic constellation by hundreds of interactions in later life can perhaps explain the strength of the emotional charge and the therapeutic effect following the reduction of this system.

3. *The experimenter's part in the formation of symptomatology of the LSD reaction*

Repeated experience showed that the person of the experimenter and the quality of the therapeutic relationship make a factor of prime importance. For a favorable course of the LSD reaction and an eventual therapeutic effect it is extremely important that the patient is sure about several things. He must feel that the therapist has medical and human interest and is striving to help him; that the therapist is undertaking the experiments for the patient's sake; he must further see that the therapist has sufficient erudition and does not manifest insecurity or anxiety in facing some phenomenon of the psychosis. The presence of a therapist, viewed in this way, represents a great support for the patient and helps him to overcome unpleasant periods of the experiment and make therapeutic profit out of it. It is of great importance that the therapist has had good contact with the patient before the experiment and in a short interview before the ingestion of the drug, induces the proper atmosphere. **With** a good therapeutic relationship, it is possible to obtain the strong cooperation of the patient who is not overwhelmed by anxiety and in-

insecurity, even when experiencing very unpleasant feelings, and can use the LSD reaction to a maximal extent in a therapeutic way. The patient often is engulfed too much in psychotic experiences, and above all he is under the influence of strong emotions and cannot optimally exploit the experiment by himself. On the other hand, the laws governing the course of the reaction are very complicated and the therapeutic work difficult throughout; so that an unqualified worker can not replace the therapist. If the therapist cannot because of any reason stay with the patient through a great part of the experiment, it is very important that the pre-experimental therapeutic relationship is strong enough and that a proper frame for the experience has been formed. This often helps the patient to maintain a fictitious relationship with the therapist even during his absence. Moreover, the patient must be sure that he may call for the therapist at any time he wishes. When these conditions are fulfilled, it is possible to place the patient under the care of an experienced nurse, or a co-patient from the group.

We have had several unfavorable experiences with patients who had been in the hospital only a short time and were not sufficiently prepared. Sometimes, for various, objective reasons, an atmosphere of improvisation and of real neglect of the experimental person showed in the ward. This had a very negative influence on the course of the LSD reaction, especially when the patient was sensitized by traumatic experiences of a similar kind with the relevant persons of his individual history. The patients reacted with depression, massive anxiety, feelings of loneliness, inferiority and superfluousness, and some had a tendency toward paranoid perception or aggressive acts. Even if the following analysis succeeded in discovering connections between the particular reactions during the intoxication and problems from their individual histories, these experiments were of little value from the therapeutic point of view.

Because of the reasons mentioned, it is necessary for the therapist to plan the experiments very carefully and to analyze in advance all the circumstances under which he is going to use the drug, as well as to face his own feelings and motivations. Before starting LSD therapy it is of great use to make clear the transference-countertransference situation. Application of LSD should not become a means of offering to a patient who does not make progress in psychotherapy an imposing and deeply penetrating agent to cover lack of success in psychotherapy, or the therapist's insecurity or irresolution. LSD should not be a "compensation" for the fact that the patient was relatively neglected therapeutically for whatever reasons. It is equally important to be sure that LSD does not represent a means for demonstrating power and authority to an inconvenient patient, who undermines and threatens the therapist's feelings of security. All problems of this kind must be made clear before the experiment begins. Otherwise they will contaminate the course of the reaction.

It was frequently observed that the therapist's entering or leaving the room, his manifestations, and therapeutic interpretations had a far-reaching effect on the symptomatology, and influenced not only the emotional and ideational aspect of the experiment, but sometimes even such

phenomena as the perception of colors in illusions and pseudohallucinations.

The experimenter's significance is extraordinarily enhanced when the intoxication is carried out within a long-termed psychotherapy with a strongly established therapeutic relation. In this case, the therapeutic relationship can, under certain conditions, by its importance equal or overtake highly relevant natural relations of the patient. It then has an extraordinarily strong affective component with varying ambivalent attitudes. Besides its real aspect there is also an extremely important parataxic one, as the patient typically transfers onto the therapist his relations to other persons from his past and present life. During the LSD reaction there occurs a generally intensified and deepened perception of interpersonal relations and accentuation of their affective charge. Where the relationship is fully developed and highly significant emotionally for the patient before the experiment, the major part of the symptomatology of the intoxication can reflect the transference problematics on the manifest level.

The estimation of the real component in the therapeutic relationship, and its transference component, is even more important here than in normal psychotherapy. The therapist should know when, for example, hostile manifestations and reproaches reflect a realistic perception of the behavior of the therapist and when the patient reproduces some pathogenic situation of his life.

The parataxic component increases with the dose; in more superficial intoxications, an extremely sharpened and deepened interpersonal perception and heightened empathy can be observed. In this phase the real aspect of the therapist's behavior is very important. The patients often estimated some inner movements of the therapist, which the latter tried to hide and which would normally not be perceived. These were feelings of impatience; distraction by other problems; lack of satisfaction with the course of the experiment; boredom, irresolution, anxiety; unpleasant reactions to the patient's aggressions, etc. This is a supplementary reason for the therapist to analyze his motives in order to insure the optimal situation for the experiment.

If the therapist fulfills this task successfully and does not contribute to the development of the phenomena of the reaction, it is possible to demonstrate more surely their transference character. The ideas, feelings and illusive transformations concerning the therapist are, then, projections of the patient's critical ego functions and also of his instinctive sexual and aggressive impulses. If special attention is paid to this fact, it is easy to demonstrate that the prosopometamorphopsies during the experiment have this character.

The patients often stated during the experiments that the therapist was continually changing affective attitudes and his mimical manifestations. The multitude of transformations was always related to the multitude of attitudes which the patient projected onto the therapist. Other times a single transformation came to the foreground and persisted for a longer time during the experiment. The patients described, besides minor,

mimical oscillations of the therapist's face (grimaces, ironical smiles, critical and hateful looks, etc.), complicated transformations of the face or the whole person, the understanding of which required special analysis. Transformations of the therapist into a strict and almighty judge were frequent and could easily be discerned as projections of the patient's own critical ego instances. Low self-esteem, and on the other side, regressive idealization of the therapist played a part in such phenomena as the transformation of the therapist into a famous scientist; a man of fascinating social career; one who personified prudence and intelligence; or a condescending demigod. The ironical subtone of these pictures, expressing the negative part of the transference, can not be overlooked. Often, however, a projection of the patient's unfulfilled fantasies onto the therapist also takes part. In other cases, the transformations are projections of the instinctive impulses. The therapist can appear as a rabid and aggressive demon who threatens to attack the patient and can take on different, brutal and sadistic physiognomies. Equally often, sexual tendencies can come into play. The therapist then assumes various seductive or obscene facial expressions, or becomes transformed into an exciting devil, or satyr. The therapeutic role which is unpleasant to the patient can be ironically attacked and the therapist becomes transformed into a Sherlock Holmes, smoking his pipe while solving a mystery; a bureaucratic, philistine clerk from a provincial village; or a hairdresser in a comic, dirty, white coat. His scientific approach to the patient and tendency to study and observe him, can be caricatured by a transformation of the therapist into a sophisticated owl. The need of a woman patient to change the therapeutic situation into one more agreeable and convenient was expressed by a complex transformation, where the room was changed to an atelier, the therapist into a light-minded bohemian painter, and the patient herself into his nude model. Frequently, on a deeper level, a transformation was observed directly into the members of the nuclear family and other close relatives (marital partner, own child).

The material mentioned reflects only the superficial level of interrelations. The transformations are always strongly overdetermined and have a very inventive and fascinating multilevel structure. In the deepest levels they can be traced back to the transphenomenal dynamic systems and to the nuclear traumatic experience from the childhood. The multiple determination of these phenomena will be discussed in one of the next chapters.

Sometimes the patient's complicated attitudes toward the therapist and his ideas about him are not expressed by illusive transformations, but by separate pseudohallucinations.

The significance the therapist can have during a psycholytic session, in focusing and concentrating a mighty emotional flood from the patient, has its consequences for therapy. On the one side it helps the understanding of different aspects of the transference relationship and strengthens its corrective potential. On the other side this circumstance makes the psychotherapeutic work very subtle and difficult.

4. *Influence of the environment and frame of the experiments on the formation of symptomatology of LSD intoxication.*

The frame of the experiment and guidance by the therapist can influence the course of the reaction in a substantial way. From the rich and broad spectrum of the symptoms active selection occurs and the attention of the subject is focused on a certain aspect of the material. With a descriptive approach, the subject concentrates on the formal aspects of the experiences. He describes the shapes and dynamics of the ornaments, the colors of the visions and different emotional qualities. But he experiences them to a great extent impersonally, as a spectator observing an interesting performance. Even if he is strongly emotionally involved, he does not see connections with his personality and his problems and ascribes all to the action of the drug. In my first descriptive and comparative studies I never saw reliving of childhood experiences, which was quite common in psychotherapeutic experiments and especially in psycholytical series and the subjects very rarely discovered dynamic and historical connections in their experiences. Similarly the subjects engaged in psychiatry were focused on the symptoms in the course of the intoxication. They tried to describe and classify them and to seek similarities with naturally occurring psychoses. In experiments with artists the interest concentrated on the aesthetic aspect, eventually on technical problems connected with artistic expression of the visions. Several artists, who were hospitalized as patients and underwent therapy, expressed in pictures dynamic connections. In all cases the frame was not only established *a priori* by the initial discussion about the aim of the experiment, but was continually defined by the questions of the experimenter. "What do you see, what shape and what colors does it have? Have you also any acoustic or kinesthetic sensations?... Do you think that these experiences resemble a schizophrenic's world?... Does what you see resemble pictures of some known artist?.. In what material would it be possible to express what you see?... Is this an expression of your visions or a kind of automatic designing?"

The psychotherapeutic frame and its detailed specificities which were characteristic of our approach, influenced strongly the course of the experiments and the way they were experienced. The patients participated in individual and group psychotherapy and were trained to seek dynamic connections.

The LSD reaction was described principally as a means for acceleration and deepening of the therapeutic process and never as a model of mental disease, especially not of schizophrenia. The seriousness and depth of the symptoms were made milder in the sense that the LSD reaction is an artificial condition resembling the dream. It was stressed that it is a tool to explore deeper levels of the personality and understand certain connections. It is very useful to prepare the patients against unpleasant experiences, especially those of extreme psychotic episodes, by explaining that emergence of important material is regularly accompanied by symptoms.

Thus, unpleasant episodes become desirable from the point of view of a broader frame, and give promise of therapeutic effect.

Even during a psychotherapeutic approach, the defined frame is repeatedly redefined by the questions of the therapist. "Have you ever seen or experienced anything similar to this? Could it have some symbolic meaning? Do you find a relation to your life history?"

The patient is thus continually focused on the search for dynamic relations and interprets many contents for himself. Moreover the whole experience causes changes. The emerging and reliving of pathogenic constellations, and finally of childhood memories, is catalyzed. Each problem may be traced back to original causes and its history understood.

Of great importance is the whole therapeutic environment of the experiments. As already mentioned, group therapy created strong relations between the patients and an atmosphere of mutual help and understanding. Patients with an unfavorable sociometric situation in the model society in the ward often tended to have more unpleasant symptoms with the experiments and needed *ceteris paribus,* more individual care from the therapist. In this area many variations occurred during the experiments and it often could be observed how deeply the frame and environment can influence the symptomatology of the intoxication.

In the presence of some of the nurses the subjects felt protected and secure and had pleasurable experiences from the drug; in the presence of others, the same patients were anxious, suspicious, even hostile. The differences were individual and no nurse had a generally favorable or unfavorable influence. In particular cases it was, however, possible to find the explanation in the individual history of the patient. To a certain extent the inclusion of the nurse in a particular category played a part among the maternal, sister, companion, erotic types, etc.

Everything said about nurses is valid also in the case of co-patients. In the period of sharpened social perception, the sociometric differentiation is accentuated and emotional attitudes, even latent and until then unperceived ones, become intensified. The group of patients divides into those who are sympathetic, antipathetic, aggressive, sexually aggressive, attractive, admired, those provoking qualms of conscience, and guilt feelings. The presence of some of them can change the clinical picture.

All these phenomena can appear in the area of thinking and feeling or lead to illusive transformations or spontaneous symbolic expressions. These elements can survive in their consequences in interpersonal relations for several days after the experiment, and provide the basis of otherwise insufficiently motivated feelings of sympathy, hostility and guilt.

5. *Multilevel determination of the symptomatology of the LSD reaction*

In repeated experiments with patients whose problems were well known (maintaining all of the described conditions concerning frame, environment and technique), it became more and more evident that a great majority of the symptoms is highly specific for the experimental person and runs according to fixed laws. The symptoms have a close connection with

the individual history. They are determined by multiple factors and reflect in a condensed and symbolic form most relevant material. The connections are, however, not evident in the first approximation. With the help of the free comments of the subjects it is, however, possible to unmask the contents and to learn the laws of symptom formation and the "language" of the LSD process. The governing laws are those known generally from dynamic psychotherapy, but with some modifications. It can be demonstrated that the symbols represent the bringing into the consciousness of "knot points," of cross-sections which join a great number of relevant problems and memories from different periods of the patient's life. Quite regularly, such an element is selected for sensorialization which can represent more important topics in the sense of a *pars pro toto.* Often the same element can express several important and controversial tendencies of the patient. There is one more general principle governing the formation of the symptoms-elements. A strong emotional charge is preferred for representation. The diagnostic and therapeutic significance of LSD is based on this fact: the intoxication provides a selection between important and less important events from the point of view of emotional life. The symptoms express in a condensed and overdetermined form the key problems, which are connected with the patient's disturbance. The associations to these symptoms lead quickly to the most relevant material.

The patients present relevant and logically consistent explanation for one symptom on several levels. The depth of the prevailing level is probably governed by the dose and by the emotional charge of the activated constellations. In superficial phases the elements of objective reality play an important role. With its deepening, their significance recedes in comparison with the projection of intrapsychic phenomena. From the experimental continuum of mutually overlapping and penetrating elements it is possible to abstract for demonstration and description purposes several important levels. Sometimes we find relevant relations predominantly in one of these levels, more frequently several levels are involved, and not rarely one symptom is meaningfully connected with relevant topics on all the levels.

Sources of symptomatology of the LSD reaction in patients

1. *Experimental situation*

   Physical elements of the environment: real objects; different sounds.

   Interpersonal influences: entrance and departure of others, their appearance and manifestations; especially real behavior of the experimenter.

2. *Therapeutic situation*

   Therapeutic relationship: its intensity and present problematics; *sociometric situation* in the ward; *frame of experiments.*

3. *Present life situation*

   Emotionally strongly charged relationships, especially relations with dependency and marked ambivalence, which the patient is

unable to solve; relations with the members of the nuclear family; erotic, matrimonial and professional relations; parental attitudes.

4. *Past life situations*
   Serious problems of family and school life; sexual problems in puberty, etc.
5. *Emotionally important experiences in childhood and infancy*
   Emotional deprivation; rejection; threatening situations; cruel treatment; humiliation; disgusting experiences; betrayal by relevant figures; premature sexual awakening, etc.

Very characteristic is the arrangement of the various elements into thematic clusters. These consist of material of a specific character deriving from different periods of the life history and carrying an intense emotional charge of a similar quality. The arrangement is a concentric one; in the very core we find the topic of a traumatic experience from the childhood; in more superficial levels similar experiences from later life; and on the surface analogous elements from the present situation may appear.

These constellations roughly coincide with what Leuner calls the transphenomenal dynamic systems, as already mentioned. If we analyze the symptomatology of successive intoxications, we find that these systems shape the content and are the selecting factor determining the way of transformation of objective reality. A single intoxication can be governed successively by several such systems. The process of manifesting these systems is accompanied by a strong emotional abreaction and the emotional charge becomes reduced by experiencing all the different qualities of sensations. After the reliving, and rational integration of the infantile core, the system is settled, loses its governing power and its elements never appear in successive experiments. Before this happens, we meet in preceding intoxications many later variations and modifications of the nuclear experience. It is often possible to predict from these repetitious formations the general character of the deepest experience.

The symptoms of the LSD reaction are highly specific for the personality of the subject and their content is overdetermined by the material from various life periods connected with a strong emotional charge. The multiple determination of the symptoms derives from the fact that they are the result of a number of factors, beginning with the frame and environment of the experiment, and including the influence of the therapist over the complicated personality of the person reacting. As a subjectively experienced symptom appears that element which is able to represent the greatest number of emotionally strongly charged contents, and belongs at the same time to the momentarily most intensively activated constellation, the transphenomenal dynamic system. The symptoms help in understanding the key problems of the subject, as free association leads immediately to most important and emotionally relevant material.

Most evident is this determination in disturbances of optical perception, with the exception of simple ornaments and other elementary sights. Illusive transformations of persons in the environment can be in superficial phases a manifestation of enhanced empathy; otherwise they may represent a projection of critical functions or instinctive impulses. This deforma-

tion concerns predominantly intensely emotionally charged relations, and above all a developed and established therapeutic relationship. Equally predictable is the transformation of physical environment. The fact of meaningful overdetermination is also valid for visions, which appear without evident outer impulse. The elements of important memories are here intimately blended with symbolic representations of different problems, before the full reliving of the core scene takes place. Acoustic, olfactory and gustatory disturbances of perception are less frequent and they usually complete the relation of expressed theme to a complex experience. Equally important are various somatic feelings and manifestations, including some symptoms referred to usually as vegetative. Even these symptoms proceed from multiple overdetermination. Especially significant are disturbances of the body image. They may serve the representation of different topics, but at the same time they can be expression of age regression. As far as emotional reactions are concerned, commonly used ones are intensified in initial and terminal phases. Later, often deeper tendencies manifest themselves. These are of the opposite character. Especially intense emotions are attached to emerging of constellations structured round a certain core experience (Leuner's transphenomenal dynamic systems). Here they often precede the emergence of the content, and before their full meaning is understood, they can be of the "endogenous" character.

III. Use of LSD in Psychotherapy

While experimenting with LSD in therapy, the complex and multifactorial character of this approach became more and more evident. Because of this reason all the endeavors to utilize any isolated aspect of this drug without respect to a whole set of other factors and necessary conditions is doomed to failure. This is especially true in the case of previous trials of some authors to use LSD in the same sense as other pharmacological agents, mainly as a possible euphoriant. In one fourth of our experiments euphoria predominated; in one half of them alternation of depression and euphoria was observed and in many experiments depression and anxiety prevailed. Affective changes during and after the experiment have an equally complex determination as all the other phenomena. A typical and standard influence of LSD on the mood and on the over-all clinical condition of the patients does not exist.

The therapeutic use of LSD must be considered a specific and intensified method of psychotherapy or at least a procedure the course of which must be governed on the basis of principles of dynamic psychotherapy. The necessary frame or set must be created on the same basis. I see on the ground of my clinical experience three basic possibilities of the use of LSD for psychotherapy.

1. LSD sessions can be interpolated into a series of normal sessions systematic psychotherapy. These separate sessions lead regularly to *an intensification and deepening of the psychotherapeutic process* and often contribute to a better understanding of the problem of the patient

and the dynamics of his personality. Exteriorization of the symptoms, the revealing of deep unconscious material and the strengthening of the therapeutic relationship often provide a strong incentive for further psychotherapy. The changes of the therapeutic relationship under LSD and some other aspects pertaining to this topic were discussed in detail in the preceding chapters and will be reviewed only briefly here.

The therapeutic relationship is intensified in all its components. Emotional manifestations observed in normal psychotherapeutic sessions and the patient's common techniques and defense mechanisms are enhanced to a sort of caricature representation. In this way it is possible to detect many tendencies, which would remain concealed in normal psychotherapy for a long time or escape the attention of the doctor. LSD makes manifest these latent or inapparent phenomena in such a distinct form that they can be missed neither by the therapist nor by the patient; this facilitates the interpretation. The therapeutic relationship is intensified both in its real and parataxic aspect. Especially in the initial and terminal phases, the empathy of the patient is greatly enhanced. With increasing intensity of the drug reaction, the outward estimations become less and less precise and finally represent only projections of the patient's intrapsychic tendencies. They are in the beginning experienced on ideational and emotional levels and expressed verbally. Later they are symbolically expressed in the symptoms of the intoxication. All the attitudes projected into the therapeutic relationship are in close connection with the patient's life history and reflect his past and present problems. Moreover, the succession of the symptoms often reveals dynamic and historical relations. It is not exceptional for an illusive transformation of the therapist to be followed by a change into relevant figures of the patient's past life, and thus the sources of parataxic distortion are clearly demonstrated. These facts can facilitate the understanding of the basic dynamics of maladaptive attitudes.

The therapeutic significance of the therapist's understanding, accepting attitude and his interpretation of these dramatic and often very open manifestations, can be seen to have an extraordinary therapeutic potential, providing a deep corrective experience. This kind of work can often be very difficult, as it requires that the therapist carefully observe and study the complicated "language" of the intoxication, and at the same time succeed in resisting maneuvers of the patient and manifestations of his strongly activated emotionality. The therapeutic technique differs in several aspects from current psychotherapy, but maintains its basic principles. It resembles the psychotherapeutic approach to schizophrenic patients.

The subject under LSD does not often maintain a standard therapeutic position. He moves freely and sometimes can be in continuous action with a tendency to act-out. The therapist is more active than usual, and can use direct interpretations of the material presented. As already mentioned, all the symptoms with the exceptions of several invariants have a close relation to highly relevant material and to the key problems of the subject. This is especially the case in optic phenomena, somatic sensations and symptomatic behavior and to a lesser extent in olfactory, gustatory and acoustic illusions and pseudohallucinations. As far as extreme psychotic phenomena, in Leuner's sense, are concerned, catatonic

stupor and excitement, motor stereotypes, fragmented experiencing with dissociated affects, etc., they cannot be used immediately toward a deeper understanding of the personality. They can be considered, however, to be an indicator that highly emotionally charged material is emerging and a transphenomenal dynamic system coming to the center of the experiential field. This is especially true when medium doses are used.

Most important are the interpretations of transference phenomena. Here the situation is somewhat facilitated by the fact that the reaction usually conveys enough material for understanding and interpreting of genetic relations and that the subject accepts interpretations more easily. The problem of timing is thus less precarious.

It often is necessary to interpret acted-out contents instead of verbalized ones. Correct interpretations generally intensify the therapeutic bond between the doctor and the patient very quickly since they demonstrate that the therapist is able to understand the problems of the patient to a considerable depth. The feeling that he is accepted by the therapist with his guilt-provoking material encourages the patient to further production of even more relevant and "forbidden" material. The interpretive questions moreover remind the patient repeatedly that he should try to think dynamically. Thus the therapeutic frame of the experience is redefined.

The intensity and the often dramatic nature of the transference phenomena make the role of the therapist very precarious. On the one side this represents the basis for unusual therapeutic possibilities in the sense of intensifying the curative process and providing corrective emotional experience; on the other, very stressful situations can arise for the therapist, who is flooded by the patient's emotional manifestations and forced to solve immediately critical situations which can arise. It is above all the tendency to acting-out which can lay great stress upon the therapist and his skill in manipulating the counter-transference problems.

LSD can be a great contribution to group psychotherapy. Whereas after several unsuccessful trials we refrained from using LSD during sessions, we found it useful to combine individual LSD treatments with discussions of the material in later sessions, when no LSD had been given. In this setting, the patient spends a great part of the LSD reaction with the therapist and the remainder among freely moving co-patients. Their observations are then compared with the protocols of the doctor and patients and discussed during the next group session.

The superficial phase of the intoxication, with its sharpened interpersonal perception, often brings out deep observations concerning the other members of the group. The culmination reveals parataxic distortions of social perceptions and often their historical sources. This occurs in the form of symbolic metamorphosis and transformations of the pertinent persons.

These observations of fellow-members, and the experiences and social behavior of the patient, become the object of analysis in the group. The discussions contribute to a deeper understanding of the problems of the subject, but often also of the other persons, who were illusively perceived in the sense of a symbolic prosopometamorphopsy. Moreover the co-Patients are often able to show very valuable dynamic and historical rela-

tions on the basis of the experiences and behavior of the person reacting to LSD.

The use of the material from the LSD reaction in group sessions leads to an unusual animation and deepening of the group dynamics. Relevant material from deep levels of the personality is discussed, which would otherwise hardly appear in the group work, with group confrontation. As in individual therapy, the corrective potential of the interpersonal relations is enhanced. Moreover, other members of the group can get corrective experience, even if they are not immediately involved in the discussion. They observe the therapist's attitude to various deep and important tendencies in the subject, which they find also in themselves and consider as unacceptable: aggressiveness, sexuality, ambitious fantasies, etc. During these discussions the patients also learn the process of the LSD reaction and gradually lose their fear of it.

The knowledge of the relationships the patient has with other group members is in this way facilitated and deepened. The therapeutic group represents a model social system, where all the patients reproduce in a very typical and specific way their problems and conflicts in natural circumstances. Similarly corrective experiences, which the patients can obtain in some categories of interpersonal relations within this system can be transferred to corresponding relations in the natural life situation. In this sense the influence of LSD on group interactions and therapeutic sessions can have great significance for therapeutic progress.

In spite of the influence of separate LSD sessions on the course of individual and group psychotherapy, the possibilities of this approach are very limited.

2. A totally different situation occurs if LSD is administered *ceteris paribus* at regular intervals *within the frame of a whole psycholytic series.* This use of LSD has its specific traits in comparison with the previous one.

First sessions do not differ from isolated LSD sessions. The patients learn the nature of the reaction and most of them lose their fear. Usually after four to six sessions they acquire a positive attitude toward this therapy and feel confidence and optimism regarding a final result.

At the same time the symptomatology of the course of the LSD reaction changes. The so-called vegetative phase becomes less pronounced. Unpleasant somatic symptoms appear intermittently during the whole course of the experiment, but quite regularly in connection with the emergence of traumatic material. Later the character of the sessions becomes transformed to that of a deep and systematic exploration of the personality, instead of that of an "experimental psychosis," esthetic or philosophical experience. As far as the initial sessions are concerned, everything said about the intensification of the transference relationship of the psychotherapeutic process and of the technique, etc., remains true.

The patients usually try to solve their problems on different levels; the first sessions usually produce material from contemporary or recent life situations, or the transference problematics, if the therapeutic relationship is sufficiently developed and emotionally charged.

In the verbalized determinants of the symptoms, more and more

elements from older layers appear in succession and, usually in the fourth to sixth intoxication, infantile material appears in the experiential field. A marked age regression can be observed, which is experienced in a complex way and with all the qualities, and has the character of a real "reliving." In the episodes of extreme psychotic experiencing, isolated elements of specific traumatic constellations emerge. The topics of successive intoxications represent an experiential continuum and appear in new variations in the course of a systematic self-revealing process. Elements of the experienced contents, or their metamorphosis, can by a retrospective revision be traced back as far as to the first sessions. In the process of a powerful, continuing abreaction, anxiety, disgust, motor discharges, emotional outbursts, somatic symptoms, etc., which accompany partial emergence of relevant memories (the condensations of the traumatic material) lose their emotional charge, and finally a complete scenic reliving can be observed. Each complete scenic reliving represents a partial synthesis and the integration of many elements, which have appeared repeatedly before. The unpleasant experiencing which took place before reliving often develops into an ecstatic episode after it; or at least a transitional relief occurs. The patient commonly experiences the full reliving of traumatic memories as a series of shocking discoveries and at the same time he usually reports a sudden insight into some present and past problems, which he now considers anachronistic and irrational. These occurrences have long lasting effects and the patients, according to my experience, do not return to pathological manifestations, which they settled in this way. The theme, the infantile core of which was fully recalled and relived, loses its dominant position in the experiential field, and is replaced by a new one. This appears again in an extreme psychotic form until abreaction enables its full scenic reliving. This process is repeated until extreme psychotic episodes disappear from the clinical picture of the LSD reaction and a scenic experiencing with pleasant emotions prevails. The liquidation of the traumatic material, by reliving and rational integration, with subsequent ecstatic experiences, is accompanied by a heightening of the patient's security and self-esteem and the disappearance of maladaptive patterns and clinical symptoms. A very typical occurrence is the resolution of ambivalent attitudes with a successive narrowing of the oscillation spectrum of contradictory tendencies and a sort of mutual neutralization. Toward the end of the procedure the patients relate that they feel personally free and exempt from various pathological dependencies they suffered from previously.

They often speak about rebirth and new life, about a new beginning. Even if the series is interrupted or terminated, the patients go on to discover new genetic relations and the process of accelerated emotional and social maturation which was inhibited for a long time by unfavorable circumstances of their life histories continues.

3. Several casual observations made during the experiments with LSD suggested another possibility for therapeutic use of this drug, at least in some types of patients: a sort of *anaclitic therapy*.

In many LSD sessions deep regression is accompanied by intensified

infantile needs. The patients ask the therapist or another close person to hold their hands or they seek other physical contact. They want to sit on the floor, near the therapist's legs, put their head on his knees; they express the wish to be cared for, petted. If they are hungry, and a meal is supplied, they ask to be fed like children. Some of these manifestations can pose serious technical problems. Sometimes the anaclitical character of the phenomena is beyond doubt, especially if they occur during an extreme psychotic episode, and are accompanied by massive anxiety or other unpleasant feelings. In other cases it is difficult to distinguish whether sexual activities on a more or less grown-up level are not involved. It is probable that both levels often can be in play simultaneously. These phenomena occur in persons of both sexes, without regard to the sex of the therapist. Originally these requests and maneuvers of the patients were refused, in accordance with the principles of psychotherapy in neuroses. Later it became clear that this problem is much more complicated. The periods with anaclitical needs are very important and the therapist's approach to them can provide a deep corrective experience or, on the contrary, it can reinforce and petrify some pathological patterns, such as emotional deprivation or rejection in childhood.

It is advantageous to provide such care as feeding, holding of the hand and covering by a blanket, if necessary. Here the therapist is helped by the frame of an extraordinary condition of the patient and by that of a medical experiment. These activities are traditionally connected with nursing care. As far as other phenomena are concerned, the therapist must be more careful. If he permits such physical contact with the patient, he must be sure about the anaclitical character of the patient's needs, interpretatively define a clearcut boundary around sexual manifestations and prevent the patient from interpreting the therapist's behavior as an expression of non-therapeutic, emotional, or even erotic interest. It is very difficult to establish fixed and generally valid rules. The therapist must rely on a complex analysis of the actual situation and govern his behavior by clinical experience and therapeutic intuition.

In spite of the precarious character of this approach it should be practiced to a reasonable extent. The procedure helps the patient to overcome extremely unpleasant aspects of the experiment and, moreover, clinical experience suggests that a very peculiar therapeutic mechanism may be involved. It seems that the deep regression of the patient offers the opportunity to provide deep corrective experience, to intervene favorably in his past history and to repair the consequences of traumatic infantile experiences.

All three possibilities for therapeutic use of LSD can be advantageously combined within the course of a systematic psycholytical series.

IV. Effective Mechanisms of Psychotherapy with LSD

The extraordinary and often dramatic effects of LSD on the person ality structure and symptomatology of the patients naturally evokes the question of the mechanisms involved. It is hardly possible to believe that a

single mechanism could be found. Probably a whole complex of mutually complementing and potentiating factors is in play.

It was already mentioned that during single administrations of LSD strong stimulation and intensification of the psychotherapeutic process was observed; here, evidently, mechanisms involved in normal psychotherapy play a part, but they are significantly enhanced. Deeper psychic processes are activated and their symbolic and often projective representation occurs. The patient thus gains rational approach to unconscious material, especially if he learns to decipher the symbolic language of the intoxication. At the same time the therapeutic relationship becomes intensified in its real and transference aspect. Genetic relations of the patient's problems are revealed. The therapist gains profound understanding and material leading to valuable interpretations. These interpretations strengthen further the emotional orientation of the patient to the therapist. The intensity of this bond gives an extraordinary corrective potential to the therapeutic relationship, if the doctor succeeds in mastering the emotional flood and consistently maintains the therapeutic attitude. The difficult position of the therapist is somewhat alleviated by the fact that the patient easily accepts interpretations which would normally be untimely. Intensive emotional experience of the reaction is connected often with verbal and motor manifestations of a high intensity, aggressiveness and sexuality. The therapist's attitude to these manifestations can represent a further important corrective experience. If, during a deep regression, anaclitical needs appear and are satisfied, this can probably mean a kind of anachronistic retrograde correction of the originally traumatic experiencing of some periods of infantile development.

In repeated administrations of LSD in the frame of a psycholytical series, all these moments are supplemented by successive reliving of various traumatic aspects of past life. A massive abreaction takes place and specific constellations, of the type of Leuner's transphenomenal dynamic systems, become consummated and replaced by other, still unsettled themes. The recalled and relived experiences are reformulated on a grown-up level and rationally integrated into the ego. This is accompanied by deep historical and dynamic insights. It seems that this process is made possible by a double orientation realized successively or simultaneously. The patient can oscillate between perceiving and experiencing objective reality and the elements of his inner life. At the same time he can shift between experiencing the present grown-up level and a deeply regressive infantile one. A very important factor seems to be the patient's ability to relive fully and with an intense emotional charge the infantile traumatic material and at the same time to evaluate its relevancy from the point of view of a grown person. This means an opportunity for rational mastering and for mature and adequate judging of the significance of these experiences. The boundaries between controversial components of various ambivalent attitudes melt, and their neutralization and substantial narrowing of their oscillation spectrum becomes possible. The partial integrations are accompanied by ecstatic experiences, which have a positive value for the Patients, elevating their self-esteem and security. Also the revealing of

the richness of the patient's mental life and its reserves can play an important part here.

In this connection the importance of creating a proper therapeutic frame for optimal course of LSD therapy cannot be stressed too much. Of equal importance is the presence of a reliable therapeutic relationship as a firm basis for experiencing all phenomena.

If all these conditions are fulfilled, the therapeutic process does not end with the termination of the experiment, but continues as further self-revelation and emotional maturation. The newly recalled experiences, the revealing of relevant relations, and corrective feed-back mechanisms from the social environment play an important part. Just as the patient originally provoked, by his maladaptive patterns, complementary attitudes in the social milieu which reinforced and perpetuated his original manifestations, now the new and favorable reactions of his environment to his changed behavior become a powerful instrument in his readaptation. This factor can be purposefully used in a therapeutic community. It has importance, too, in the frame of everyday life.

V. Dangers Connected with Administration of LSD and Risk of Complications

When all the proper conditions for LSD therapy were maintained, the complications were relatively rare and not serious. When whole psycholytical series were practiced, instead of separate intoxications, then a completely new view of the complications was obtained. Most of these phenomena are not real complications, but quite customary and predictable manifestations of LSD therapy. Subjectively unpleasant symptoms during the experiment such as massive anxiety, deepening of depression, alarming somatic discomfort, motor excitement, etc., are closely connected with the activation and emergence of traumatic material. Their character can be understood later when the pertinent pathogenic experience is relived. An intensification of clinical symptoms after the treatment signifies that one of the transphenomenal dynamic systems became highly activated but could not be settled in that session. Such an occurrence should not be taken as a signal to interrupt LSD therapy, but rather to shorten the interval and carry out a further session sooner than usual. The traumatic material often is liquidated in the next session and a better condition can be observed.

This new understanding of the nature of so-called complications found its expression in the instructions given to the patients, and a therapeutically favorable "double bind," in Bateson's sense, was created. The patients were told that a subjectively unpleasant course of the experience or a worsened clinical condition following the treatment do not mean that LSD was not useful, or that the session was a failure. On the contrary, a real improvement may be preceded by suffering an unpleasant abreaction. After the liquidation of the traumatic material, pleasant episodes appear, sometimes even of an ecstatic nature. This is the basis of the "double bind" involved in this instruction. Whether the experiencing

is pleasant or unpleasant, the patient has the feeling that the procedure is continuing favorably and the promise of therapeutic success gives him the strength to overcome very painful episodes in the experiment. When this was practiced, the patients often evaluated positively experiments which had a very unpleasant course or after-effects.

Objective complications were predictable manifestations of the extreme psychotic phase and their occurrence was related to the height of the dose and to the intensity of the activated transphenomenal dynamic systems. Appearance of extreme psychotic symptoms with a medium dose indicated the presence of an unusually relevant and emotionally strongly charged dynamic system.

In accordance with Cohen, the problems connected with LSD therapy can be divided into three categories:

1. *Complications occurring in the course of the experiment*

In this direction the phenomenon most frequently observed was subjectively unpleasant feelings accompanied by wishes to terminate the experiment. The relation of this occurrence to an excessive fight for self-control and against the emergence of traumatic material has been mentioned. Deep depressive conditions were relatively frequent, sometimes with desperation, hopelessness and suicidal thoughts. These tendencies were understood and usually the patients could be distracted and returned by psychological means to the role of participant observers in the frame of a therapeutic procedure. Several times anxiety increased to a panic state. A distinct paranoid reaction can give an unpleasant coloring to the experiment; the latter was relatively infrequent in our sample and did not necessarily appear in all successive experiments with the same subject. Rarely, an intense excitement of the extreme psychotic episode with emotional, verbal and motor abreaction could represent a serious problem. Rolling on the floor, loud weeping and crying, biting and tearing of clothes, breaking objects, destroying flowers, damaging furniture, etc., was observed in such cases, but no real aggression toward human beings ever occurred. Sexual aggression was a serious problem in only two cases of the sample. Once a typical stupor with epinephrine reaction was observed and interrupted by a parenteral chlorpromazine.

2. *Complications occurring immediately after the experiment*

In this category the most frequent occurrence was a prolonged course of the experiment, with the manifestations lasting from morning until late evening hours or even late at night. This appeared relatively more often in repeated experiments and was not regarded as a negative event. It sometimes even brought therapeutic progress.

In a great number of patients during the rest of the experimental day various changes were registered, such as distinct affective lability, depressions, somatic symptoms, proneness to anxiety, irritability, signs of depersonalization and especially a general feeling of fatigue. In many eases it could be demonstrated that these manifestations represent inten-

sified pre-experimental symptomatology. Often a revival of the symptoms in hypnagogic experiences was observed and sleep was disturbed at night following the experiment. Only rarely these disturbances persisted until the next day or for several days after the experiment. Various somatic complaints were observed like cephalgias, cardial and gastric symptoms, stimulation of appetite, etc. With only a few exceptions the phenomena were not too intense and did not represent serious problems. The relation of these occurrences to the dynamics of transphenomenal systems could be demonstrated. They indicated a high activation of one of these systems and emergence of traumatic material which was not settled. As already mentioned, the best remedy for this kind of complication is the next LSD session and the liquidation of traumatic material.

3. *Long lasting consequences after the experiment*

These were practically all of a positive character and are described in the section on psycholytic series. In one patient, with obsessive neurosis combined with sexual deviations (homosexuality, fetishism), a paranoid interpretation of the experiments and a magical perception of the therapist has persisted until the present time. He is convinced that during the intoxication the doctor can purposefully induce in the subject any phenomenon he chooses. Many casual occurrences during the experiment were interpreted as planned and intended to influence the patient in a specific way. This conviction is, however, detectable only by a directed interview and has no influence on his behavior and further therapy.

Unclear is the situation in a patient who had a single treatment by LSD within a group session. She reacted unusually by catatonic stupor and an epinephrine reaction, which was terminated by chloropromazine. During the next few days she was all right and had a completely usual behavior. A fortnight later, after a matrimonial conflict, she jumped out of the window of her fifth floor apartment and died of her injuries. It could not be stated with certainty whether only temporal or causal coincidence was involved. Later experiences, however, show that catatonic stupor should have been considered a sign of massive activation of a transphenomenal system and understood as a serious warning. Superficially ordinary behavior in such a case is not a justification for refraining from all possible security measures. Moreover, this experiment took place at the time when the significance of a sufficiently established transference for the elimination of serious complications was not yet sufficiently understood.

If the therapeutic relationship is strong enough and the patients instructed in the nature and laws of the psycholytic series (the dynamics of transphenomenal system being sufficiently understood) serious complications can be virtually eliminated, especially under conditions of hospitalization. Minor disturbances, generally classified as complications of LSD experiments, can be considered lawful and comprehensible occurrences of systematic psycholytic series.

VI. Conditions to be Maintained for Optimal Course of Psychotherapy with LSD.

At the end of this presentation a relatively standard schedule will be described, which is the product of several years' experience with LSD. It was elaborated by a method of trial and error during experiments with this drug under varying conditions and utilizing the experience of others as outlined in the literature.

Systematic psychotherapy with LSD should be carried out in a specially structured department differing in several aspects from ordinary psychiatric wards. The therapeutic milieu should approach, as nearly as possible, a natural life situation and allow the patients to display their various typical roles of an adaptive and maladaptive nature. The members of the therapeutic community should represent a quasi-closed model society, which would combine diagnostic and therapeutic functions. Both sexes should be included and the opportunity be given to take part in an especially organized occupational therapy designed to display in a model fashion professional maladaptive patterns. The authoritative approach should be replaced by a permissive and understanding one; proper limits to this permissiveness should be established with regard to the social acceptability of various manifestations and the therapeutic interests of all the patients. The general orientation of the department should be a dynamic one; all the doctors should have sufficient experience with ordinary psychotherapy and should have carried out previous psychotherapeutically directed LSD sessions. Also the nursing staff should be well versed not only in psychotherapeutic principles of the approach to patients, but also in the understanding of the special nature of psycholytic therapy. Here even autoexperiments are of great use. In the therapeutic regime, individual and group psychotherapy should be properly combined. This should create a therapeutic atmosphere and give the patients an opportunity to learn the laws of LSD therapy and acquire a suitable attitude toward it.

In an environment so structured, the patients would experience a whole series of psycholytical sessions at approximately one-week intervals and with doses of 150 to 400 mcg—more if necessary. Before the treatment begins, especial instructions are given, defining clearly the nature of the experiments and explaining briefly the rationale of this therapy. It is explicitly stated that LSD reveals one's personality and that all the symptoms have an inner sense and meaning, which is to be sought. Of great importance is the information that unpleasant experiencing of certain parts of the experiments is a common occurrence and a prerequisite to therapeutic success. This helps the patients overcome painful experiences and Prevents pessimism, when an individual experiment is followed by a transitional and temporary intensification of symptoms.

During the greater part of the experiments, the therapist is present, especially in the last period. This is a *conditio sine qua non* in the first

experiments of the series. Later, when the patient's approach and type of experiencing is basically known, it is possible to prolong the periods when he can be alone. He must always feel a firm background of the therapeutic relationship and real skill of the therapist in case of emergency. The therapist gives support and protection to the subject. By proper dynamically and historically oriented questions, the therapist redefines repeatedly the optimal frame of reference for therapeutic exploitation of the LSD session. Even under maximal intensification of the therapeutic relationship and under emotional flood and eventual acting-out of the subject, he must maintain the therapeutic role and the principles of dynamic psychotherapy. With caution he can also satisfy some anaclitical needs of the patient.

A minor part of the experiment, in initial and terminal phases, is experienced among co-patients in the ward. The nurses and patients are informed that the subject is to have an LSD treatment; under collective supervision they may observe his behavior and verbal expressions. It is advantageous to use one selected member of the group, who stays uninterruptedly with the subject and makes notes until the end of the experiment. Unless absolutely necessary, the experiment should not be interrupted prematurely. It is much more useful if the reaction ends spontaneously and if occasional emergencies are handled by psychotherapeutic means only. In some cases, psychostimulants—methedrine, Ritalin, Preludin, Lucidril etc. may be helpful.

After the termination of the experiment or treatment the doctor summarizes the experiences with the patient; on the next day the patient writes a detailed report. The doctor's notes, the patient's report and the observations of the nurses and co-patients are integrated and discussed, first with the patient individually and then, with his consent, in the next group session.

It is implicit in the over-all frame that some LSD sessions can be followed by worsening of the clinical condition. The patients know it and consider it as an indication that something important is going on. If this occasion is very marked, the next experiment should be carried out as soon as possible to settle the suggested traumatic material.

If the suggested complex of conditions is maintained, LSD seems to be an unrivalled diagnostic and therapeutic tool, which could become in the future a method of choice in the approach to most psychogenic disorders. This generalization is not based, of course, on a sufficiently large and representative sample of "cured" patients. It leans rather on the existence of some common basic mechanisms and laws described in preceding chapters, which were repeatedly observed and verified in psycholytical series with individual patients. It seems probable that after the nature and the laws of the LSD reaction have become sufficiently known in all their complexity, LSD may prove to be the long desired and sought for means of intensifying and shortening the psychotherapeutic process. It promises, moreover, the possibility of extending the indications for psychotherapy beyond its present limits. It is difficult to estimate at present

the possible heuristic significance of LSD and its value in the verification of hypotheses of different schools of dynamic psychiatry.

It should be stressed again how complex are the factors which determine the symptomatology and personality of the patient undergoing an LSD reaction. By carefully maintaining the principles discussed here, the chances of untoward complications are reduced. In this way, objections to the study of this unusually interesting and promising drug may be eliminated.

DISCUSSION

Dr. Abramson: Dr. Grof used the term "psycholytic." Dr. Leuner felt that we should begin the conference by clarifying certain definitions. Dr. Leuner, would you like to open the discussion in that area?

Dr. Leuner: Yes, I really think, to avoid misunderstanding, it seems important that we differentiate clearly between two completely different applications of LSD and other psychotomimetic drugs. We hear at this conference reports of experiences with both psychedelic therapy and psycholytic therapy. Psycholytic therapy is a term that was coined by Dr. Sandison. It means the loosening of the psyche. The Europeans have developed this form of therapy and know this form alone; that is why the expression "psycholytic therapy" is the only one we know and the technique of psycholytic therapy is the only one that we are practicing. Therefore, I think it would be helpful to distinguish between these two different techniques of using LSD and similar compounds in psychotherapy. We ask: what are the differences between the two? I suppose one can say that, first, the indications for psycholytic therapy, as against those for psychedelic therapy which will develop during the course of this conference, are the classical indications for psychotherapy—that is, neuroses, psychosomatic diseases, depressive reactions, sexual perversions, and sometimes also borderline cases, but not alcoholics or psychotics. And if you ask what is the difference in the techniques, then psycholytic therapy uses small doses, from 30 to 200 mcg of LSD, and uses symbolic dream images, regressions and transference. As far as I can see, psychedelic therapy uses high doses, 400 to 1500 mcg, arriving at so-called cosmic, mystic experiences, oneness and ecstatic joy. In psycholytic therapy we want to activate but remain within the psychoanalytic process. In psychedelic therapy there is no foundation in the classic psychological and psychodynamical theories. There are parallels to the religious and mystical experiences of various cultures, and so on. In psycholytic therapy numerous sessions are required; twenty, thirty, forty, fifty; in psychedelic therapy only one single, as they call it, "overwhelming" experience is aimed at. In psycholytic therapy, analytic discussion of the experienced material

afterwards in individual and group sessions is necessary. As far as I can see in psychedelic therapy, a certain religious or mystic suggestion is used in preparation; and a specific foundation with music, flowers, and so on, but there is no detailed discussion of personal problems. Last point: the goal of psycholytic therapy is to cure through the solution of present neurotic complexes and lead to progressive maturing of the entire personality. Psychedelic therapy seems to me to be more of a symptomatic cure, the change of behavior not being further defined.

I think there are differences, and it would be very helpful if, in this conference, we could work them out better than I could do. We could find a better understanding and knowledge of both types of therapy if we could discuss the detailed points of both.

Dr. Fremont-Smith: Thank you very much, Dr. Leuner. Before you comment on this, Dr. Grof, I want to make a comment myself. In the first place, I want to make a comment on definitions, because with quite a lot of experience in conferences, I have found that definitions are very good for some purposes and very bad for others. A definition is excellent, provided it is for a highly specified purpose, and this definition, Dr. Leuner, is your definition of how you are using these terms in this conference. A generalization of a definition which is made as a generalization is usually restrictive and leads to controversy and is unacceptable. Now, I don't believe that in this group we will reach a common or even two or three common definitions. For instance, your definitions of these two forms of the use of LSD are based on certain assumptions which you are making, but other people in the room have different assumptions. Therefore, I am quite sure that these two distinctions that you make would be acceptable to some and unacceptable to others. Now, it will be worthwhile to us to try to specify the nature of our differences, but not to try to push anybody to accept one's own definition, because that just never does work, and the reason it doesn't work is because the assumptions are so different. Now, you have the first chance, Dr. Grof, if you wish to make a comment on these definitions, or on anything else.

Dr. Grof: Well, I just mentioned in my paper that my observations, experiences, and conceptions are very much in accord with Dr. Leuner's. I found his conceptions very useful for therapeutic practice with LSD.

Dr. Fremont-Smith: But you used the terms a little bit differently from Dr. Leuner, did you not?

Dr. Grof: I don't think so. There are certain theoretical differences as to details, but the general conception is almost identical.

Dr. Eisner: I want to say that I hate to disagree with so learned a colleague as Dr. Leuner. It's much simpler than that. Psycholytic is a European term, psychedelic is the American term, because I was present at Brown-Madison where they discussed "psycholytic" and "psychedelic" a number of years ago and they had used these terms. There may be specific usage that has grown up in Europe for a spe-

cific kind of treatment, but actually the term "psychedelic," which is Humphry Osmond's word, means mind-changing or mind-manifesting, and it has no specific reference to a particular type of therapy.

Dr. Osmond: The context of this, I think, was that the original use may be referred to as fantastica, as hallucinogens or psychotomimetic. In 1955 or so, Aldous Huxley and I had a competition between us to beget a new name, because we felt that this did not cover all the requirements. And so Huxley suggested a very beautiful name, "fanerothine." Fanerothine, however, was too beautiful, I thought, so I suggested a number of names, of which "psycholetic," "psycheroxic," and a number of others came out; but "psychedelic" seemed to be the one that was most clear. It was fairly easy to pronounce and actually had some fairly respectable background etymologically. I don't think that there is a distinct difference between the use of "psychotomimetics," which frightens a good many people, and a more general term of something like "psycholytic," with the idea of lyzing the mind, which means, in a way, also dissolving it. It is not quite so pleasing to me as the idea of manifesting or enlarging it.

Dr. Fremont-Smith: May I suggest that when each of us tries to dissolve the minds of others, or to manifest something, when he uses these terms, he would say, "At this moment, in the use of this term, I mean. . . ." and specify what he means; then we'll know and there won't be any argument about it.

Dr. Servadio: I was just about to say what you just stated and I will give one example. Take the term "transcendental," which has been used by Dr. Grof also. We all know that in mystic or religious sects this has a very definite meaning; it means to come in contact with something supernatural, superhuman and divine. Now I take it, at the same time, that many of us who use this term from time to time do not give this term that same meaning. Let's be clear beforehand whether we want to say that something really is mystical or religious or not.

Dr. Balestrieri: You say that one patient's symptoms resembled a fit of psychomotor epilepsy which she could not differentiate from those she had had previously. May I ask whether that patient was the only one who suffered from psychomotor fits? Five out of eight of our subjects showed a clear tendency to reproduce, under the effects of LSD, psychopathological phenomena which had already appeared during their spontaneous psychomotor seizures. Our patients had the feeling that their usual attacks were repeated. Since similar effects were also observed by us with amphetamine i.v., we think that patients showing psychomotor epileptic effects seem to have a low threshold toward disturbances of consciousness of hallucinatory and confusional types. This experimental observation raises the very difficult question of the role played by a similar disposition in the epileptic symptomatology itself.

Dr. Grof: Yes, as a matter of fact, the patient mentioned in my paper was the only case of psychomotor epilepsy in our sample. Moreover, it

was a dubious case from the point of view of differential diagnosis. The analysis of the clinical picture did not give sufficient cues for distinguishing the fits from the patient's other symptoms of a clearly neurotic character. Moreover, even the EEG record was a borderline one and did not help us to make a clear-cut differentiation between psychomotor epilepsy and hysteria. Because of this, this patient was finally included in our sample although we excluded clearly organic cases. I would like to mention in this connection the very pertinent work of the Czechoslovakian neurologist, Dr. Dubansky, and his team, who use hallucinogens for the exteriorization of neurologic symptoms in organic brain diseases as an aid for more subtle diagnosis.

Dr. Balestrieri: We recorded several EEG's, and we didn't find any activation of the epileptic type during the LSD effects.

Dr. Grof: But the EEG was not normal, or was it?

Dr. Balestrieri: Yes, it was borderline or abnormal before the LSD, and it did not change during the drug effect where it concerns epileptic patterns.

Dr. Fremont-Smith: During the experiments?

Dr. Balestrieri: Yes, I mean ours.

Dr. Kramer: I simply wanted to make a comment on the objection that was raised to the use of the term "psycholytic" to mean dissolving the mind. It's commonly accepted that, after all, the mind or mental processes are built up (employing common Freudian analytic terms) as a result of instinctual processes and basic behavioral processes. If the mind can be built up, why can't it be, then, broken down or dissolved in one sense? And, now I want to make a comment on another point. I don't think at this stage of the conference that we should make the sharp and fast decision that the *mystical* must be linked up with the religious or the supernatural. I think that's a false assumption, because the mystical experience still has a physiological base. I would like to know, in the psychedelic experiences or these one-shot experiences, if they are helpful to an individual, how they help to solve his problems. What do the one-shot experience and the slow, psychoanalytic therapeutic experience have in common that seem to be able to give the patient a more realistic relationship to life and his problems in the world? I think this is the important question, and not whether it is a mystical experience or supernatural one or not. I just wanted to indicate that.

Dr. *Baker:* I see some grand mal seizures occasionally, sometimes for the first time with LSD patients, and I wonder if anyone else has.

Dr. Fremont-Smith: What dosage?

Dr. Baker: Oh, 800 or 1000 mcg.

Dr. Fremont-Smith: In the first instance?

Dr. Baker: Yes.

Dr. Fremont-Smith: Has anyone else seen a convulsion seizure initiated by LSD?

Dr. Osmond: May I refer to the work on poor Tuska, the elephant, I think

in Omaha. He was given a very substantial dose by dart, and he, poor fellow, I think went into status.

Dr. Fremont-Smith: Or something. Whatever elephants go into.

Dr. Osmond: Well, it was apparently status, and poor Tuska died, but this was on a dose equivalent to about 1500 to 2000 gamma in a man, I believe.

Dr. Dahlberg: You referred, Doctor Grof, to your impression that the female half of your sample was more sensitive to the drug than the male half. Now, I bring this up because in the EEG, apparently, when the studies are sufficiently controlled, there are differences in the waves of the males and females. This varies with the menstrual cycle, I presume. We have just one small note here, that this is merely an impression and not controlled, but I would think that for future studies something like this might be noticed.

Dr. Grof: This was only a clinical impression. I think that on a clinical basis it would be very difficult to solve this problem, not only because of the extreme interindividual and intraindividual differences of LSD symptomatology, but also because of our inability to learn and control all the relevant variables.

Dr. Dahlberg: It may be that some other person has studied this in more detail. I haven't heard of it, though, myself.

Dr. Fremont-Smith: Any detailed studies of the relationship of the menstrual cycle to the impact of LSD?

Dr. Ling: I have two cases, Mr. Chairman—two cases of women in the prime of life, using my method of the long-term European approach, who have rung up and refused to come because it was the first day of their period, both motivated by the fact that on previous occasions it had been a completely abortive session.

Dr. Fremont-Smith: Abortive session on the first day?

Dr. Ling: Both made it abundantly clear that they'd not waste their time by having it on the first day of their period.

Dr. Fremont-Smith: We tend to operate as if we should expect a specific reaction from the human being to a specific drug or stimulus. This is what we were brought up on; this is what I was brought up on as a medical student, but we have now learned that this literally is not true. When I was a third-year student in medical school, I was shown that pitressin, the derivative from pituitrin, was a diuretic. I can remember the experiences of my second year; I can remember the experiment on an anesthetized cat, and it was a diuretic, but in my fourth year in medical school I learned that pitressin was an antidiuretic. It was shown to be an anti-diuretic provided the individual was having water diuresis. This drug, then, has diametrically opposite results on the same patient, if the patient is in a different condition; the state of the organism is as important in the response to a stimulus as the nature of the stimulus. This is so fundamental that I think we must learn to accept this as basic. However, it is true that we do get certain common phenomena; we do tend to get relief of headache from aspirin, so that there are common denominators. But

we shouldn't push too hard the expectation that you would get the same result from the same dose of the same drug even in the same patient at different times. And this is one of the things that we've been getting from the different reports, such striking differences in therapeutic effect, in hallucination effect, in various other effects. This, I think, we should take as to be expected. It is quite important, however, to try to specify as far as we can what was the nature of the difference in the state of the organism, that is, the difference in the history of the patient, preceding any given dosage, which was related to the different effect of this dosage or this drug.

LSD Psychotherapy; LSD Psycho-Exploration: Three Reports

Edward F. W. Baker, M.D.*

The observed effect of a drug on a tissue depends on drug, tissue, conditions of administration and method of observation. Keeping in mind these variables, we can state that LSD, given to non-psychotic subjects for the purpose of psychotherapy or psychoexploration, will:

(1) Re-illuminate old recorded experiences;

(2) Return such old experiences to current coin of perception, attention, association and action (more accurately, re-perception, repeat attention, re-association, re-enactment);

(3) Permit recording (re-recording) of this re-factored experience.

These statements are deduced from clinical observation.

If LSD does temporarily change the balance between present and past experience then there is obviously a good opportunity for insight formation. We feel that LSD, judiciously used, enhances psychotherapy. A good research design, however, is needed to prove or disprove such an impression.

What follows are three reports of clinical experience, using LSD as a psychotherapeutic or psychoexploratory drug. In the summary of Report One is a table of indications and contraindications. The Appendix is the protocol of "A.B.," the only patient to date, in our experience, who possibly suicided in relation to his LSD experience.

REPORT 1

Case Selection, Method and Outcome
in 150 Consecutive Patients Treated by LSD Psychotherapy
Discussion
Oddities
Summary

* Toronto Western Hospital, Toronto.

Case Selection

Over four years, 1961-1964 inclusive, I have treated 150 "functional," non-psychotic psychiatric patients, using LSD psychotherapy as part of the total treatment program. These patients have received between one and ten LSD treatment sessions. The treatment sessions usually have been weeks or months apart. Dose per treatment session has been 100 to 2000 mcg LSD, except for two cases who received less than 100 mcg, one because of age (68) and one because of compromise. A few patients have received small closes (less than 100 mcg) in addition to the larger dosage. I feel that the usual indications for psychotherapy can be widened if one uses LSD techniques and in general would feel this drug could be considered for any patient who appears to have a learned disorder, who is not psychotic at the time of treatment, who can physiologically stand marked excitement, and who accepts the conditions of 24-hour hospitalization, plus the rare possibility of complications.

Method

The patient, previously worked up, is admitted to the psychiatric ward, fasting and drug-free except for diphenyl-hydantoin sodium (Dilantin) in the case of a known or suspected epileptic. He is placed in a single room, given a physical examination, and fastened to the bed by a light belt which is locked ("Posey" belt). LSD is administered intramuscularly. Doctor and nurse sit at either side of the bed as co-therapists whose chief aim is to define the transference, much of which will be perceptual, and to interpret transference, often in a non-verbal and acting-out manner. As a general rule we attempt to rearrange all emerging material in transference terms, constantly bringing the patient to focus on, describe, feel toward, and inter-act with the doctor and nurse (for instance, our particular approach to the Jungian archetypes is that they are displacement-distortion-symbolizations of anyone's basic family triangle experience).

In order to enhance transference meanings we use every feasible perceptual and motivational aid: for instance, mementoes, old toys or transitional objects picked out by the patient and brought by him; objects which have had known personal and/or interpersonal meaning in the patient's early family life; any objects which epitomize symptomatic or dynamic material. We have brought in music, flowers, a violin, a rifle (in the case of a gun-phobia) and any number of old toys, gifts, photographs, books, writings, etc.

Usually the new patient is given an initial dose of 100 to 600 mcg LSD. Standard LSD security precautions are instituted. If there is no perceptual distortion within 15-20 minutes, we administer a second dose similar to the first. Alcoholics and dexedrine addicts have increased tolerance for LSD, as do obsessional personalities and borderline psychotics.

Sessions are not repeated closer than three days apart; generally repeats have been several weeks or months apart. We have not found it useful to give more than four or five sessions to any given patient as a general rule, except where some other major factor such as frontal leucot-

omy can be brought to bear. Incidentally, 18 of the 150 patients have had bimedial frontal leucotomy following LSD treatment failure. One of these was being subsequently extended to standard (bilateral) frontal leucotomy. A 19th patient had a bilateral thalamotomy in another centre. Post-leucotomy LSD sessions may be of great benefit where pre-leucotomy sessions have failed.

The LSD session is terminated in 13 to 15 hours, occasionally earlier, by giving chlorpromazine in divided doses up to roughly 1 mg chlorpromazine for every mg LSD.

Outcome

Table 1 lists the patients according to their APA* at the time of treatment (1961-1964 inclusive) and rates outcome according to six possibilities, as of the end of 1964. Follow-up period is from three months to four years.

The outcome rating is my own judgment and of course partakes of all the flaws of clinical impression. Where there were multiple diagnoses, I have tried to place the patient according to the major diagnosis. In the large category of mixed psychoneuroses I include the cases of so-called "pan-neurosis" and/or "pseudo-neurotic" or "borderline schizophrenia" who have never yet had frank psychotic periods. The alcoholics in this table are separate from the 30 alcoholics to be reported below in Report Two. Patients in remission from psychosis are listed as such.

A word about the categories of outcome. The "much better" category contains those patients clearly much improved and whose improvement appears to result from one or several LSD psychotherapeutic sessions. All but one of these patients have had clear-cut major insights. Category "better" contains those patients who, although insightfully improved, are not quite as well as the previous category. Also, other factors have appeared to play an important part in their improvement. The "some better" category, which contains the largest number of subjects, consists of those who have gained and maintained moderate insight, and yet are unable to make much use of the insight gained. The "same" category contains those patients who apparently made no insightful gain and where there is no improvement in "sick-living." Some of this latter group provide the observer with valuable psychopathological material but miss seeing it for themselves.

There were four patients who had a three or four day LSD-induced paranoid psychosis which was terminated by electro-convulsive therapy. These are indicated by asterisks. In each case the short-lived psychosis merely prolonged the hallucinatory LSD state and the content of the psychosis was the main LSD insight. For instance, the case of acute anxiety state became homosexual panic; the obsessive-compulsion neurotic case generalized her insight *re* being "sexually mauled"; similarly two paranoid states in remission were re-precipitated. It should be noted that four other paranoid psychotics in remission were not re-precipitated. The four rendered temporarily psychotic were not unusual as to diagnosis, degree of illness, dosage of LSD, age or sex. The dosage of LSD in these cases was

* American Psychiatric Association Nomenclature Diagnosis.

TABLE 1

APA Category	No. of Cases	Much Better	Better -	Some Better	Same -	Worse -	Not Known
1. Psychotic Disorder (in remission)	-	-		-			-
Involutional psychotic depression (in remission)	1	-	-	1		-	-
Manic depressive (in remission)	4		1	2	1	-	-
Paranoid state and/or paranoid schizophrenia (in remission)	6	-	-	5	1	-	-
2. Anorexia Nervosa	1	-	-	1	-	-	-
3. Psychoneurotic Reactions							
Anxiety	5	-	1	2	1	•	1
Conversion	3	1	-	2	-	-	-
Phobic	11	1	3	6	1	-	-
Obsessive-compulsion	6	1	1	2	2	-	-
Depressive	11	3	2	5	1	-	-
Mixed	29	1	6	14	8	•	-
4. Personality Disorders	1					1	
(a) Pattern: Schizoid		-	-	-	-		-
(b) Trait:	2			1	1	(suicide)	
Emotionally unstable		-	-			-	-
Passive-aggressive	18	1	1	10	5	-	1
Compulsive	26	-	5	12	7	-	2
5. Sociopathic Sexual Deviation Homosexual, Male	8	-	1	5	1	-	1
Homosexual, Female	1	-	-	-	1	-	-
Exhibitionist	2	-	-	2	-	-	-
Paedophilia	1	-	-	-	1	-	-
Impotence	2	-	-	1	1	-	-
Nymphomania	1	-	-	-	1	-	-
6. Addiction Alcoholism	8	-	2	4	2	-	-
Dexedrine and/or barbiturate	2	-	1	-	1	-	-
7. Special Symptom Stuttering	1	-	-	1	-	-	-
Totals	150	8	24	76	36	1	5

* Indicates temporarily worse and required E.C.T.

400 to 600 mcg i. m. All four were easily remitted by 4-6 E.C.T. and retained the insight. These four patients by follow-up time remained in the "some better" category. All four are back at work.

The one case labeled "worse" is reported in full in the Appendix to this article. He is the only case labeled "schizoid personality. " (The diagnosis was made at the time of treatment before the knowledge of

suicide and serves also to differentiate this man. I do not know if it was the LSD psychotherapeutic interview which precipitated the unfortunate suicide. As noted in the protocol, this patient had left the hospital, planning to separate himself gradually from his mother; he suicided two weeks later.

Re suicide: there are four other patients in this series who had previously made serious suicidal attempts. Prior to their LSD treatment, each had been admitted to our hospital in deep barbiturate coma. These four all have done well, post-LSD treatment.

There is one other case to discuss for the sake of completeness. This is the paedophile. He also was admitted to our hospital originally in deep coma, having been transferred to the psychiatric unit from the respiratory unit. In addition he had temporal lobe epilepsy. He had seemingly tried to kill himself to escape the impulse to molest young girls. We gave this man his LSD interview when he was off anticonvulsants and precipitated *status epilepticus.* On recovery from his *status* the patient had no recollection of the ten minutes of the LSD interview. He was discharged on anticonvulsants to be followed, but died unexpectedly two weeks later. We were unable to procure an autopsy. I have left this man in the "same" column as I do not feel he was made worse or better by his short unremembered LSD experience or by the LSD-epileptogenesis.

DISCUSSION

Our findings are similar to those reported by workers in Europe, Britain and America, notably Sandison *et al.;* (1) Abramson *et al.;* (2) Leuner (3), etc. I must agree with Tyhurst (4) to the effect that "d-lysergic acid diethylamide (LSD 25) has no validated therapeutic value in psychiatry." Most measures in psychiatry unfortunately have no validated therapeutic value. In addition to the earlier reviews by Rothlin (5) and Wikler (6) there is also a recent review by Rajotte (7) in the Canadian Medical Association Journal.

Our over-all results are: two-thirds improved; one-third unimproved; with the bulk of the patients falling into the "some better" category. It appears to us that LSD extends the range for psychotherapy; it may well be that LSD techniques speed up psychotherapy. It may be that LSD makes psychotherapy more accurate.

I should like to add some color to factual data outlined in Table I. For instance, it is a commonplace occurrence on our ward to have someone audibly crying, fighting, appealing, vomiting or asking forgiveness in relation to childhood material. Similarly, expressions of joy, elation, grandeur are heard. Such demonstrations teach not only patient and therapist, of course, but inform the whole ward. We have had to pay attention to how much anger or appeal, etc., the ward structure can tolerate.

The staff on the ward, too (as well as the patients concerned), have seen the psychopathology of, for instance, various phobias, laid right out the table. Phobic psychoneurotics have done surprisingly well. One

cancerophobic was in the habit of finding various lumps, bumps and spots about her skin and mucous membrane surfaces. During her initial LSD interview she saw the room full of scrutinizing eyes which coalesced, finally, into the critical eyes of her father glaring at her through the window in the door. It became extremely clear to all concerned that this lady was in the habit of scrutinizing herself in the ultimately sadistic way which she had taken over from her father. A subsequent LSD interview some months later again emphasized the father-daughter relationship, tying in money, sadism and cancer-death concepts as the visual image of green death extending up her arm when the doctor tried to hand her a dollar bill. (This kind of sadistic interplay and imagery did not occur between this patient and the nurse—only between this patient and the doctor; all of which fits the known historical data.) Similarly for the other phobias, we have seen the clear-cut breakup of severe agoraphobia in a young man when, with three LSD sessions, he realized that his mother had a "noose" about his neck and that he had no choice but to break loose from this, or remain sick. Similarly with a gun-phobia in a Danish lady. Her second LSD session brought her to realize the male genital symbolization involved (you must believe that this was not suggested by the therapist). At the same time she realized her own marked, hitherto repressed, genital sexual drive. In her words, and to her surprise, she shouted, "I am a sex maniac." Such a break-through of insight and breakup of symptoms occurred while the patient, leafing through a hunting book which she had brought from home, was looking at the picture of the head of a charging rhinoceros—especially the "nose-horn." The patient was post-leucotomy.

We have also had good outcome in the neurotic depressive reactions and in otherwise refractory conversion hysterics. It may be that LSD in sufficient dosage (and under conditions of therapeutic intent) can force open an hysterical isolation mechanism without insight. Such appeared to be the case in our one refractory conversion hysteric with negative conversion symptomatology. This man had been an hysterical triplegic for some years following a hockey injury. Earlier LSD psychotherapeutic interview recovered two limbs to his use. His over-determined hysterical conversion remnant represented "mental amputation of the leg" at mid-thigh. The state did not budge with LSD doses to 1600 mcg. A final dose of 2,000 mcg LSD, recovered the sensory motor and integrative use of this limb within 10 minutes of injection. For what it is worth, the particular tactics for that particular interview were that it was to be as non-verbal as possible, that we were not to respond to his general hysterical appeals for help and that we were to bring all interpretations to bear upon the offending part. But I do not think these stratagems account for his cure. There was no expressed insight at the time, or since. This man has remained well over two years. It is impossible to state how much was drama and suggestion versus how much LSD forcing of repressive barriers; we are awaiting more cases to arbitrate the point.

We have been impressed by the ease with which large-dose LSD sessions demonstrate psychopathology; from the broad vistas of egoless-

ness, indecision and negativism right down to the most intricate and detailed ambivalent or trivalent dilemma formations and to a wealth of interpersonal "barrier-bond" imagery. Ambivalent images would include vertical or horizontal splits in the self-image or doctor or nurse-image; such visualizations as the eyes and mouth that do not seem to fit together; such acts as clinging intensely to the arms while backing up in terror from the eyes; such self-images as a princess-frump visual dichotomy seen by a manic-depressive girl as she looked at her own face in the mirror, etc., etc. *Re* the barrier-bond effect, several women in remission from paranoid states have found themselves under LSD, in a cocoon, or web or corral of some sort with the nurse, the doctor being definitely outside this barrier.

In general, we have been surprised at the results obtained with phobic psychoneurotics, borderline schizophrenics, compulsive personality disorders and manic-depressive reactions in remission. Our data *re* sexual deviation and addiction is suggestive but not definite enough to comment on.

Oddities

Herewith are listed several oddities we have observed over the course of treatment of the 150 patients mentioned:

1. *Catatonic stupor.* We have seen catatonic waxy flexibility come and go in one of our previously paranoid psychotic patients who at the time of LSD interview was in an E.C.T.-induced remission (and has so remained). This patient saw the nurse as a watery-eyed, poor, benighted image of her own mother and was in the typical ambivalent struggle to comfort or reject this mother-image. At times the waxy flexibility lateralized to one or the other arm; at times it was bilateral. It has not recurred post-LSD.

2. *Left-right temperature differential.* We had one patient who started off cold in all four extremities, became warm in the right hand and foot, while the left hand and foot remained icy. Later the left limbs warmed up. Can transference reach through to, and lateralize in, the autonomic vasomotor system?

3. *Rapid dream interpretation.* We have several times been impressed with extremely apposite and rapid interpretation of dream material by patients undergoing LSD psychotherapy.

4. *"Half-craziness."* We have seen several patients in the mixed psychoneurosis category produce a full-blown schizophrenic-like reaction in relation to one therapist, replete with delusions of persecution and the like, while able to maintain a simple, normal conversation with the other therapist. The case noted in the Appendix approaches such a split. I have come to recognize this group in office interview—at least the group where the "half-craziness" is directed toward the father-figure. These people initially throw some very provocative paranoid barbs and difficulties but when they get nothing but "good mother" responses, warm up and become progressively non-psychotic.

5. *Stuttering:* The one stutterer we treated came to the opinion, dur-

ing his LSD interview, that there was a father-way and a mother-way of saying any word. Stuttering would occur whenever he tried to pronounce a word both ways at once.

6. *Gilles de la Tourette Syndrome.* Our one case of Gilles de la Tourette Syndrome, who was given two LSD sessions after his bimedial frontal leucotomy, saw the letter "S" (symbolic of his former well-known compulsive expletive) on the cheeks of the doctor, who at the same time looked red-faced and angry and put the patient in mind of his father. This particular patient, pre-leucotomy, used to follow and watch women in shoe stores, beauty parlors and dentists' offices. It is therefore of some interest that during his first LSD session the patient would describe only the reflection of the head and toes of the nurse as mirrored in the overhead ceiling lamp; the context suggested genitalized sadism, displaced, however, from the center to the periphery of his image of woman.

Summary

Tables 2, 3 and 4 summarize the indications, contraindications and dangers of LSD psychotherapy used according to the methods outlined above.

TABLE 2

Indications for LSD Psychotherapy

1. Psychoneurotic Disorders:
   - Conversion
   - Phobic
   - Depressive (neurotic depressive reaction; reactive depression)
   - Other (mixed psychoneurosis; pan-neurosis; pseudoneurotic schizophrenia; borderline or latent schizophrenia.)
2. Personality Disorders:
   - Cyclothymic (obsessional)
   - Passive-aggressive (obsessional)
   - Compulsive
   - Sexual Deviation
   - Addiction
3. Transient Situational Personality Disorders
4. Manic-Depressive Reaction (in remission)

TABLE 3

Contraindications to LSD Psychotherapy

Absolute:	Any physical condition precluding marked excitement, e.g. cardiovascular disease.
Partial:	Pregnancy
	Epilepsy
	Paranoic Personality
	Overt Psychosis
	Organic-toxic cerebral disorder.

TABLE 4

Dangers

	No. out of 150 cases
1. Schizo-affective psychosis	4*
2. Provocation of suicide?	1
3. Grand mal seizure	4
4. Status epilepticus	1

*All remitted by electroconvulsive therapy.

REPORT II

Initial Study of LSD Psycho-Exploration in Alcoholics

Twenty eligible and volunteering chronic alcoholics were selected at random from the in-patient population of the Addiction Research Foundation, Toronto, and transferred to Toronto Western (General) Hospital for a single psychoexploratory interview. They were given either 800 mcg LSD, or 60 mg ephedrine sulphate dissolved in 8 cc total solution, according to a pre-set double-blind randomized sequence.

Protocol: A fairly rigid three-hour interview was pursued as per the attached protocol.

Standard interview: Duration, three hours.

	Patient attached to bed; tape recorder, etc.
0	Injection
15-30 mins.	Define patient's "transference" toward (a) doctor (b) nurse
30-60 mins.	Define patient's feelings and attitude toward (1) A drink of water as given by (a) doctor (b) nurse and (2) a bottle of whiskey.
60-120 mins.	Free-wheeling discussion; interpretation *re* drinking, death wish, fear, etc.
120-180 mins.	Re-presentation of drink, bottle, food

Six *standard questions:*

1. What is your main problem?
2. What caused it?
3. Are you an alcoholic?
4. How do you see the future?
5. If you could change things, what would you change?
6. Why do you drink?

After interview doctor and nurse fill out following data sheet:

Interview Data Sheet Name_____Date_____

To be filled in by doctor and nurse jointly immediately after session. If necessary, fill out separate sheets.

1. Person Rate: trace, to five plus
Seen as Approach Withdrawal Nil
Doctor: _____
Nurse: _____
2. Drink Tasted as Accept Reject Run Away Nil
Doctor: _____
Nurse: _____
3. Child-Patient Relation Measured by cuddling, baby talk, clasping, etc.
Seen as Love Hate Fear Nil
Doctor: _____
Nurse: _____
4. Life and Death 5. Meaning of bottle; Meaning of alcohol
6. Genital-sexual behavior; urethral-sexual
Seen as Approach Withdrawal Nil
Doctor: _____
Nurse: _____
7. Correlation between verbal and non-verbal behavior
8. Prognosis (a) For 6 months (b) For 1 year
Recovery Unchanged Slight imp. Marked imp. Worse

It turned out that 10 alcoholics received LSD and 10 received ephedrine sulphate. The double-blind approach held only until the interview was under way. In 19 out of 20 cases the doctor could not help guessing correctly which drug the patient had received. (In the 20th case the doctor guessed wrongly, thinking that this somewhat deteriorated patient who considered himself a poet had received ephedrine sulphate. Actually he had received LSD.) Ten other patients of the in-patient population of the Addiction Research Foundation were kept as additional controls.

All 30 patients were followed up for a full year. There was no difference in outcome.

Some hints emerged, however, on retrospective matching of the outcome with the interview data. In retrospect there are three factors in the LSD interviews which appear to match outcome. These had to do with items 1, 4 and 6. Those LSD-treated alcoholics who did well all had a univalent emotional display toward the nurse, i.e. either affection or hostility. All wanted to live, and in all actions fitted their words. By contrast those LSD-treated alcoholics who did poorly all showed ambivalent (love and hate) emotional display toward the nurse; all said they wanted to die; and their actions during interview did not fit their words. The emotional display toward the doctor, univalent, ambivalent or nil, did not appear to be of any prognostic value. We were unable to get this kind of data out of ephedrine-interview or office interview.

REPORT III

Subjective

I know that LSD can induce basic phenomena of psychiatric interest, other conditions being favorable, because I have experienced some of these

myself. I should like to make short comments on the phenomena of "perception of the transference;" regression; evocation of early experience; and intensification of perception and association.

1. *Perception of the Transference* Throughout my LSD session I consistently saw the nurse's face as broader than it is and the doctor's face as narrower than it is. These particularities are historically true of my parents. The reactions evoked in me at that time and at that dose (100 mcg) showed me to be in some disagreement and conflict with the "doctor-father" figure and contrastingly in a generally warm relationship with the "nurse-mother" figure. For instance, when the nurse gave me a spoonful of soup it tasted rich and full-bodied, but when the doctor gave me a spoonful of soup it tasted empty, peppery and as something to be spit out.

2. *Regression* At meal time during my LSD reaction, for instance, I discovered again what it must be like for a very young child to drink from a bowl of soup. I was in a world of hand and mouth, a world which does not think around corners or consider locomotion. It is a world where you put the spoon down, grab the bowl with two hands and up-end it, drinking heartily, leaving a soup moustache across your face.

At one point during my LSD reaction I saw a baby arm and hand out to my right side, just beside my head. The limb seemed familiar and seemed to be my own.

3. *Evocation of Early Experience* With the aid of a bit of peach peel, with the nurse standing by, I was able to re-experience what must have been a sequence in my childhood; i.e. asking for, and getting permission to eat some freshly cut pieces of apple, properly meant for a pie. The whole sequence came quite vividly, including the idea of being allowed to do something that was just a little wrong, the idea of being barely able to see over the edge of the kitchen counter, etc. Those peach peelings tasted like the finest apple imaginable.

Intermittently throughout my LSD reaction I had the sense of a drawing together, non-painful, in the front of my abdomen. The belt about me was loose, no associated nausea, etc. I have not seen this particular response in other subjects. The most plausible historical source appears to be the neo-natal taping of my abdomen to reduce a small umbilical hernia.

4. *Expansion of Perception and Association* Cool water felt icy. If one tapped a metal surface the sound seemed to reverberate. I was able to conjure and hear a whole piano keyboard by tapping the metal at the head of the hospital bed.

At the word "peanut" I was able to conjure an image of a large peanut, using the small square pattern on the white counterpane and the folds of it, as a basis for the image. A slight beige color added in enhanced the image. In other words, I was able unexpectedly to find a figure-ground relationship which enabled me to turn an auditory symbol into a visual sign.

Another sequence had me as if sitting on, or part of, a round surface —which meant mother, and also meant the rounded surface of the earth, and indeed all substance. It seemed that everything in existence was made of this one substance, mother-earth; that any dualism or dichotomy would

be only apparent. Furthermore, that any upsurge or momentary shaping of the basic substance would soon collapse back into the basic unchanging substance again, and was really made of it anyway. One visual metaphor, for instance, was the image of a "twister" or water-funnelling storm at sea, with the meaning that this twister, although it looked different from the sea, was really made of sea-water and would finally return to sea again.

We have presented three reports considering LSD as a psychotherapeutic and/or psychoexploratory aid. The first report indicates two-thirds improved out of 150 "functional" non-psychotic psychiatric patients treated by an LSD psychotherapeutic technique. The second indicates possibilities of evoking prognostic factors in chronic alcoholics by use of structured LSD-psychoexploratory interview. The third report is subjective.

APPENDIX: Protocol of "A.B."

This single, 29-year-old engineer was admitted for an LSD psychotherapeutic interview. Six months ago he received an anti-depressive course of E.C.T. which enabled him to return to work.

The lifelong complaints of felt personal inadequacy *vs.* peer females have remained however. In addition, he is excessively concerned about loss of hair (he is balding) and the smell of his axillary sweat. In general he sees no future for himself and feels tired out and old before his time.

History indicates birth to an oil company executive, with one elder sibling, a sister. There was a stable "nanny," who stayed with the two children until their early teens, throughout moves of "A.B." to S_ for a year at age four, and to Canada at age five, with both parents being absent during the war.

Three or four years ago the patient nearly became engaged to a girl a little older than himself who, according to his mother, was—and still is—eminently eligible because of family background. Patient learned of his fiancee's affair with a married man, and has turned against her; generalized to the perfidy of all women in an unspoken moral argument with his mother *re* this girl.

Two nurses and a doctor were employed, in an effort to better define the implied ambivalent relationship with the female figure. Because of the possibility of a double mother-figure we hoped to find childhood depressive reactions.

Physical examination normal with minimal tendon reflexes.

Following 300 mcg LSD, the patient initially conjured a distant, "sinister," powerful, fascinating, Oriental female goddess-idol with billowing smoke at the base, in the window of the door. This feature, plus fascinating "snake-like" colors, soon was displaced onto Nurse One, who eventually clearly became a repetition of the patient's mother. The ambivalence here was clearly (dependent) "attraction" with "distrust." The

other masks her true rejection feeling by over-emphasizing the opposites: how glad she is to have her son home at week-ends, how sorry she is he doesn't bring his banjo, etc. He finds his mother "narrow" and "unadaptable" and "devious."

(Note: Patient has invented electrical gadgets which in essence are designed to get more adaptability out of a given space: e.g., three outlets from one plug. Is this a mechanical way of displacement solution of the mother figure?)

It became clear that the two girls the patient had been attached to were mother replacements.

Note: "Other" criticism (which is the source of self-criticism) was projected on to mother figure. Nurse No. 1's glance implied a strain, a repulsion and a reproach reminiscent of how the mother used to look at, and look after, patient's eczema (age 16-17).

Nurse No. 2 appeared as the older sister figure and seemed to be equipped with "wires and cables." The great ambivalence was directed toward her, *i.e.* less attraction but more trust. "In a hurricane she is the one I'd go to."

The doctor remained unchanged in appearance throughout the interview; as is the case with father, patient found him adaptable, chose him to go out for food, etc.

Partial Features

1. Much interest in interplay of "volume" and "space."
2. Fear of appearing effeminate.
3. Partial achievement of distance from the mother—*e.g.* the patient hopes he will act on his dislike of his mother by not being so close to her.

Final diagnosis:

Schizoid personality with anxiety and depressive features.

DISCUSSION

Dr. Mogar: I believe Dr. Baker indicated that hysterics seemed to respond quite well to LSD treatment. This contradicts the findings in a number of other papers which have been submitted to this conference, which indicate that hysterics respond poorly to LSD treatment. Is there some comment on these different results? It might help if we separate the response of hysterics during the experience in contrast to subsequent benefit.

Dr. *Baker:* We had one case, as I mentioned, with a hysterical triplegia of some years' duration in a middle-aged man. Prior abreaction attempts, using methedrine, amytal, and lower dosages of LSD had not remitted this man. We used him as a test case, increasing the dosage of LSD on re-interview. At 2000 mcg, we got a remission which has been

sustained now for several years. I may say that we used every suggested and psychodynamic approach as well to focus on the LSD interview. At any rate the remission occurred within ten minutes of the drug reaction. So you can apparently breach the hysteric's inhibitory barrier. He was a very non-verbal man. However, following the use and recognition of use of his legs, he staggered down the ward, kissing whomever he saw, accepting congratulations. But he did not then, nor lias he since, verbalized any recognizable psychodynamic insight.

Dr. Savage: I really admire Dr. Baker for his courage in using LSD with involutional manic-depressives and paranoids. It suggests to me that perhaps we have been a little too fearful and timid in our approach. Have we been threatened by others in the hostile field with which we have been surrounded? I am coming more and more to the conclusion that LSD might be the treatment of choice with depressions, because according to MMPI data, at any rate, it moves the depression scale down further than anything else being used. It stays down; it doesn't come shooting right back up. There is, of course, the danger of suicide, as Dr. Baker has suggested. But the suicide rates are not very high, as Dr. Cohen has indicated in his paper. My own experience has been two suicides in fifteen years, which is about the same as my rate for non-LSD therapy.

Dr. Hoffer: I would like to ask Dr. Baker how many from each group reported, LSD and ephedrine, did well, especially how many of the control ephedrine cases did well? Secondly, how many of the ephedrine group had something approximating the psychedelic experience?

Dr. Baker: Only one or two in each group did well. None of the ephedrine group had much of an experience at all, merely a little stimulation, heartbeat, nervousness, and so forth.

Dr. Ling: I would like to ask you the setting under which this was done. You told us that you observed, I think that was your word, four schizophrenic reactions. Were these already hospitalized or were they outpatients, people coming in for the day and going back to their law practices and things of that sort? And do you feel, as we would in Europe, that precipitating a schizophrenic reaction is potentially pretty dangerous? You made a reference to leucotomy. Sandison, I think, gave massive doses to two post-leucotomy cases. They got no real psychedelic reaction at all.

Dr. Baker: Were those patients at a schizophrenic level, perhaps?

Dr. Ling: I don't know.

Dr. Baker: At any rate, LSD certainly is active and effective with post-leucotomy in people who do not have full-blown psychosis.

Dr. Ling: You found it effective?

Dr. Baker: Yes, very effective. Regarding the other point, the setting is a general hospital psychiatric ward; the patients are always admitted for a day and a night and must be re-interviewed and re-appraised before leaving the next day. Of the four sustained schizophrenic reactions, two had had spontaneous psychosis before and were in

remission. The other two had not. For instance, one of the latter was a practicing doctor; he came in, in a state of acute anxiety reaction (neurotic), unable to work. We turned it into a homosexual panic by the use of LSD, and then in a few days gave him several E.C.T., achieving a remission with insight. That does have legal complications, certainly. We are going to have to face these if somebody sues us, I guess.

Dr. Ling: Yes, I see.

Dr. MacDonald: I was wondering what events have led to your using restraint?

Dr. Baker: Early on in our acquaintance with this drug, before we used restraint, we had one pre-pubertal boy walk past the attending nurse, grab a chair from somewhere and start battering up the elevator operator, who at the moment looked like the boy's father. Another, by a combination of mistakes—slipped out of his belt—he was an arsonist who was also homosexual—and ran naked down the hall, trying to flood the place literally. Our staff quietly enfolded him back to the bed and to more certain restraint, including chlorpromazine.

Dr. Osmond: Now I think one part, lobotomy, is quite an important one here. Do you feel yourself that the lobotomy was an essential sort of a precursor to the LSD? Or is it conceivable that perhaps the LSD might have preceded the lobotomy with benefit to the patient? Because of the lies regarding the many dangers that we hear about LSD, I'm prepared to feel that there are also dangers of lobotomy.

Dr. Baker: Yes, there are. I can think of several who had no useful LSD experience pre-leucotomy; then did have, post-leucotomy.

Dr. Rinkel: We gave LSD to a patient who had had lobotomy. The patient recovered very well after the lobotomy and was quite well. But then he took LSD, and went back to a psychosis.

Dr. Fremont-Smith: Well, what duration of psychosis, Dr. Rinkel? Two days? Or a few weeks, or a few months? LSD may normally produce a temporary toxic psychosis. The regression under LSD, how long did it last?

Dr. Rinkel: A day or two.

Dr. Fremont-Smith: So, it was relatively brief.

Dr. Rinkel: Very brief.

Dr. Eisner: I would like to ask Dr. Baker why he uses such large doses and by what process he arrives at such large doses.

Dr. Baker: We have gradually worked and tested out our acquaintance with the drug. We have come to use large doses with the borderline schizophrenic, the alcoholic, and, as mentioned above, the hysteric. Perhaps any eligible case that has not been "opened" by a lesser dose is a candidate.

Dr. Eisner: Have you ever tried intravenous Ritalin about three or four hours after the LSD? Ritalin also shatters the ego defenses just as well as high doses of LSD.

Dr. Baker: I've tried mescaline, but I haven't used Ritalin.

Dr. Cohen: I don't think you've answered the question about the effect on your hysterics. You have just reported more cases of convulsions following or during LSD than appear in the literature, the entire literature, and I wonder what you think about that? Is that due to your restraint or do you have any other explanation?

Dr. Baker: It might be due to restraint, or perhaps to the generally higher dose rate. We now routinely pre-administer Dilantin sodium, I. M., to a patient with a known convulsive tendency when we do not want a convulsion. For two cases this was the first time that they had convulsions. One man, a severe claustrophobic, could have been in the barbiturate withdrawal period since he had stopped his chronic overdose of Amytal a week before LSD.

Dr. *Ward:* I would like to ask about the number of complications you have encountered. I bring this up because in two different settings I've been getting two different things. One setting, where I'm allowed to give LSD, is at the end of a disturbed ward, locked tight. I would tend to get some panic there. I've never had this before in a much freer setting.

Dr. Eisner: We have had to use restraints with Ritalin when there was some sort of psychotic complex underneath. We've had no epileptic seizures. We use it continually and it is not involuntary. We ask them, "Do you want this?," and they always say, "Yes."

Dr. Grof: I would like to make a comment on the so-called complications following LSD administration. I assume that this makes sense only if we think in terms of single isolated LSD sessions. If LSD is given within the frame of a whole psycholytic series, the "complications" must be considered quite a normal event in various periods of this series. According to my experience after some of the sessions during systematic LSD psychotherapy the patients can grow considerably worse in the free intervals; and this condition may last until the next LSD session. Whether the patient improves or becomes worse after a particular session depends on what he experienced in the terminal phase. The character of the free interval can sometimes even be predicted. I have observed from time to time psychotic decompensation of neurotic patients which required the strictest supervision in the free intervals. These episodes were always transitory and were resolved in a subsequent session. It would be a mistake to discontinue LSD therapy at this moment. We had very good experiences with continuing LSD therapy during this psychotic decompensation as soon as possible, *e.g.,* shortening the free interval to three days only, under constant supervision of the therapist, and use of common psychotherapeutic techniques. The patients are able to settle the emerging unconscious material which could not be mastered in the critical session. The psychotic symptomatology clears up and I often see a considerable improvement thereafter.

Now I would like to reconsider a point in Dr. Buckman's paper—to his note that some groups of patients might be contraindicated for LSD therapy because of worsening of the clinical condition that

occurs. I would like to ask him whether he tried to continue LSD psychotherapy under this condition without regard to the threatening worsening of the clinical picture.

Dr. Balestrieri: We treated 80 different patients without any sign of epileptic activation. May I know whether those patients who were treated with high doses had a very strong and prolonged reaction before the attack?

Dr. Fremont-Smith: We are a little confused. There was a question addressed to you, Dr. Buckman, and you never got the microphone. I'm sorry. Dr. Baker, will you answer this last question first and then we will go back to Dr. Buckman.

Dr. Baker: Yes, a great onset of anxiety and very much excitement preceding the fits.

Dr. Balestrieri: You mean excitement or autonomic effects?

Dr. Baker: Well, I can't answer that precisely.

Dr. Buckman: The answer is, we did on occasion carry on with LSD even if there was no apparent improvement in the patient's condition. While I have the microphone in my hand, I'd like to clarify my position in setting up original criteria for accepting or rejecting patients for LSD treatment. We could only take on a certain percentage of patients who were referred to us. We wanted to accept only those who would not become too disintegrated by LSD treatment. I would stress that we had to tread rather cautiously, as we were working entirely with out-patients and most of our patients had to be able to return to work the morning after treatment. I would like to make a comment about treatment of hysteria and I am rather interested in Dr. Baker's results. It is difficult to be dogmatic on the results of a series of one case. We, for instance, treated a gross mono-symptomatic conversion hysteria with LSD and we made the patient worse. We precipitated a severe depression for which the patient had to be hospitalized for a number of months. I wonder whether Dr. Baker would like to hazard a guess as to why his particular patient got better?

Dr. Baker: We were ready with this particular patient to take the risk of inducing a paranoid schizophrenic state, and we thought he was tending in this direction. He was a wheel chair cripple and very touchy. I don't know why he remitted.

Dr. Godfrey: I want to comment also on the epileptic reactions. We've had no reactions like this. We have also given a fairly high dose, 1000 mcg, to people who were psychotic at the time we gave them the drug. We've also had psychotomimetic reactions in patients who were not psychotic before we gave them the drug. We have traced these reactions back to the effect of the attitude of the treatment personnel. We have been able to give the drug again and get a psychedelic reaction, after we have worked through with the treatment personnel what had caused the psychotomimetic reaction.

Variables in Psycholytic Treatment

C. H. Van Rhijn, M.D.*

INTRODUCTION

Psycholytic treatment is not, as I first thought, the simple procedure of giving a patient with a certain neurosis a certain dose of LSD and letting him work out his problems for himself. During the ten years in which I have used this medium (by which it is possible to expedite psychotherapy that has run into a roadblock), many new variables have made treatment not only more complicated, but also more subtle. These variables are listed below. They are the results of experiments, observations, intuition, empathy and discussions with patients.

Learning to handle the psycholytics in treatment of neurosis is, however, not as complicated as the many variables would suggest. I think the method could be learned by a qualified psychiatrist in about half a year, through studying and observing methodology while assisting a colleague, who should have, I think, at least three years' experience in psycholytic therapy, in combination with at least five of his own experiences, with dosages ranging from 50 to 500 mcg.

PART ONE

1. Indications and Objects of Therapy

A. Indications.

Discussion may go on indefinitely concerning which patients will respond best in psycholytic treatment. No fixed indications nor certain signs can be used here, as far as I know. Use intuition, empathy, or the patient's motivation, his capacity for understanding and acceptability of new insights; or use the Rorschach, as Ling and Buckman do. I have, however, seen marked improvements in seemingly hopeless cases—preschizophrenics, drug addicts and chronic compulsive neurotics, while some of the less severe neuroses, mostly with poor motivation, showed little benefit. The best sign is a good understanding with the patient before treatment. The patient should trust you so that he will be able to go (with you) through many a difficult moment.

* *Zenmvarts voor Psychoterapie,* Enchede, Holland.

Contraindications would be: poor motivation, sheer curiosity, sensation-hunger, some cases of hysteria, overt schizophrenia (good consolidation after one bout); epilepsy, psychopathy or psychopathic tendencies combined with neurotic trends.

B. The objects of psycholytic therapy can be:

1. To loosen up a fixed and stagnated situation in ordinary psychotherapy.

2. To strive for quick results in situations of emergency, such as anxiety neurosis some weeks before examinations.

3. To alleviate a compulsion neurosis. (You can start early here, because compulsive neurotics hardly ever react favorably to verbal psychotherapy.)

4. To give acceptation-frustration neurotics (*neurose d'abandonnement*) the love and security of a good father and mother, giving compensation for these missing elements in childhood. (N.B. The method is especially suited for this purpose because of the nearly always experienced state of regression in which the patient is again a baby and wants and feels what babies normally want and feel.)

5. To dig from the subconscious repressed elements, causes of neurosis.

6. To loosen up early fixations which give the patient an infantile character. (Infantile signs can be detected in almost any psychosomatic complaint.)

7. Deliverance from ego-dominance, from existential guilt, from severe isolation.

8. Experimental studies on the nature of psychosis or connected with learning how to handle these drugs in therapy. LSD may be given to normals if the purpose is sincere. Motivation must be earnest because of the possibility of alteration in fixed beliefs, which can, through regret afterwards, lead to bitter reproaches.

II. How to Prepare the Patient

A. Preliminary steps.

1. Without preparation, the patient is bound to experience needless anxieties. I think at least 2-3 hours of explanation of the method and an understanding of the patient's inner attitudes are necessary.

2. It may be desirable to start the treatment without many preliminaries if the rapport with the patient is good and the object of therapy is one not expected to be reached by ordinary psychotherapy.

3. In most cases, a start with verbal biographies and phenomenological interrogation, while building up expectation and trust in the psycholytic method, may be employed.

B. Things one should agree upon before the treatment.

1. Attitude of *"Laisser aller,"* passivity, acceptance, interest in hidden secrets of the subconscious and unconscious.

2. The patient should be told beforehand about resistance which is likely to appear (in intellectualization and/or paranoid feelings toward the therapist).

3. Under our conditions, the patient is asked not to drink alcohol for 2-3 days before treatment and to eat little or nothing before LSD. He may use his sleeping pill the night before if he is used to it, but will do better without. His pajamas, toothbrush and a towel are required.

C. After the injection.

1. The patient may be reminded that he should accept everything that will be revealed to him with interest and gratitude.

2. In case the patient is tense, talk soothingly about nothing.

3. If the last treatment was not successful, the patient should be encouraged and addressed suggestively.

4. It can also be of value to sit quietly in a "you-need-not-talk" attitude, to demonstrate passive acceptance.

5. Leaving the patient immediately after the injection is less desirable, because this may activate anxiety feelings of being deserted.

6. A hot-water bottle often gives a warm feeling of security and being cared for.

III. The Choice of the Drug

Some years ago Mescaline, LSD and Psilocybin were available, today only the latter two are. In all these years, I have not seen essential differences between the three drugs used. LSD is still the easiest to handle and the most predictable in reaction. Psilocybin may be used initially in a dose of 3 mg intravenously. It produces immediate reaction (within 30 seconds) so that the patient has not the time to build up anxiety. The Psilocybin reaction (I.V.) lasts from one-half to one hour. In higher dosages it can produce schizoform reactions (delirious, confused, restless). Do not use this drug if the patient has an unstable personality. Mescaline was, I think, less suited for use in the out-patient-clinic setting, because of its prolonged course.

iv. Methods of Administration

A. *Orally:* Mescaline could not be injected. The drug was swallowed with tepid water and tasted disagreeable. *It is no longer used in Holland-* LSD can be given orally (in pill form 25 mcg), or an ampule may be diluted with distilled water or halogen-free tapwater. Psilocybin is available in pill form containing 2 mg, and ampules containing 3 mg active substance. Given orally, Psilocybin does not regularly produce favorable reactions, even with doses up to 60 mg. In cases of severe hysteria only, 2-8 mg Psilocybin may be sufficient to produce a good reaction.

B. *By injection:* No essential difference in reaction is observed be-

tween oral or injected LSD, but the onset is quicker and the reaction is shorter after injection. Psilocybin is preferably injected. For both, the intramuscular injection in the upper arm is the method of choice, although some prefer the intravenous injection, because the effect sets in more rapidly. Do not give hysterial patients intravenous injections because they seldom can stand the rapidly increasing sensations.

v. Dosages

A. *With LSD,* different approaches can be used. You may start with 25 mcg, increasing each successive treatment by 25 mcg until the optimum is found (75-400 mcg). In other cases you begin with 50 mcg, with steps of 50 mcg. Seldom does one employ the procedure of starting with 100 mcg and adding 100 mcg each time. Giving a high dose of 400 mcg or more for the first time is only possible after you have convinced yourself of the stable nature of the patient (in normals for experimental purposes). The maximum dose I have used up to now was 900 mcg in one night.

B. *Psilocybin-injection.* For a new patient's first reaction, 3 mg may be administered to give him a general idea of the method of treatment. Sometimes 9-12 mg intravenous produce feelings of acute disturbance and disintegration with severe anxiety; 6-12 mg intramuscular are somewhat more apt to produce hallucinations. The effect also lasts a little longer than with intravenous. Orally, 2-4 mg sometimes have effect in hysteria. In some other types, however, this dosage does not seem effective. On the other hand, 40-60 mg have also been given without a good reaction.

vi. Combinations of LSD and Psilocybin

A. The combination of LSD-Mescaline was used some years ago (200 mcg plus 200 mg) with favorable results. Mescaline being no longer available, no further experiments on this combination have been carried out.

B. LSD plus Psilocybin in one injection (intravenous or intramuscular) is possible, but it is often not clear if this combination offers any advantage. Perhaps one could aim at a rapid onset with Psilocybin to be followed by the slower LSD reaction.

vii. Repetition of Dosage

A. *After two hours,* a second dose of LSD can be given, often with pleasant effect; a second dose of 300 mcg after a first dose of 400 mcg prolongs the reaction without danger of severe after-effects. This was the maximum dose one patient was given, 500 plus 400 mcg, and she responded beautifully.

B. *Psilocybin.* After one-half to one hour, a second dose of Psilocybin (3-9 mg) may be given, but it does not seem to work as well as the first dose. Increasing the dosage of Psilocybin enhances the risk of confusion and anxiety. LSD injection one hour after Psilocybin produces about the same reaction as the two drugs combined. Psilocybin 2-3 hours after a dose of LSD sometimes gives the patient a sudden insight into his problems, but increases also the risk of acute confusion.

VIII. Combination with Other Drugs

A. *Before injection of* LSD, etc., Amytal 65 mg, Librium 40 mg or Valium 20 mg may be given to allay anxiety, and Marzine to lessen the chance of vomiting.

B. *Parasympathocolytics:* Atropine 1 mg, Artane 4 mg, Orphenadrine 100 mg, etc., enhance the LSD reactions without heightening the risk of confusion. I do not often feel the necessity for using them, and consider their use only in very rigid ("pre-parkinsonistic") types.

C. *Stimulants:* Ritalin, Methedrine and Dexedrine; Ritalin 20-40 mg intravenously, 1 or 2 times; Methedrine 15-30 mg intravenously once; Dexedrine 25 mg intravenously once. Of these three, Ritalin suits me best. (See the book on this subject by Ling and Buckman.) Ritalin can be given at different intervals after the LSD injection. The most remarkable effects can be seen if Ritalin is given 2 hours after LSD. When given after 4 hours, the response is not so good, but more observations on this point have to be collected.

D. *Other drugs,* such as Tryptizol (Amitryptilline): My experience is not yet sufficient to warrant discussion here.

ix. Day or Night Treatment

The dark room was used by the Mexican people in the mystic rite. I prefer to use the darkened room, and the evening-night treatment. The night is more quiet, there is a natural tendency to relax, to be passive; some patients are able to work next day. Attempts at orientation into external reality are not desirable. The dark is associated with the subconscious and with anxiety, and the causes of anxiety, such as punishment in cellar or cupboard, come more easily to the surface in the dark. When the patient turns the light on, this is often an indication of resistance or lack of self-surrendering tendencies.

x. Music

There is a tape-recorder and a connection to each of the three rooms. The moment when the music is switched on may vary (at the beginning or perhaps after 2 hours). It goes on uninterruptedly for three-and-a-half hours and stops automatically. The music is by Bach, Brahms, Bruckner, Debussy, Dvorak, Mendelssohn, Vivaldi (not too much), Beethoven (not the piano concertos), Cesar Franck, Mozart. (Piano music often is found disagreeable).

The patient is asked which music he prefers. If he has good records, he can bring them along and have them played. (A record-player is already near the tape-recorder.) In the rooms there is no need felt to alter the volume, but some patients want to be able to switch the loudspeaker off. No experiments have been made yet with modern or primitive music. Stravinsky, with his "Rite of Spring" (*"Sacre du Printemps"),* is the most modem composer used.

XI. Company

Most of the time I am assisted by an able nurse. When two of the three rooms are occupied, it is possible for either my assistant or myself to be constantly with the patient. When the three rooms are occupied there is no alternative but to leave one patient alone for a while. Some patients appreciate company very much, some even demand it, and become a nuisance if, in their opinion, they are "deserted." This could be associated with memories of analogous situations in childhood. Others ward off company. They say they don't need it. They tell me that I can go to bed if I want to, etc. But this also requires interpretation. A good method is to sit with the patient every half-hour for five or ten minutes to let him feel you are there; you need not talk. With paranoid reactions, frequent contact is not desirable in my opinion, except to remind them of the possibility beforehand. After a new injection, stay with the patient for about 15 minutes.

B. *Function of company:*

1. Be assuring, soothing, quieting, passive; say nothing; hold hands.
2. Dissuade patient from thinking or talking; murmur, "Let yourself drift."
3. Ask how things are going.
4. Listen to complaints, information or discoveries.
5. Interpret in Jungian/Freudian sense the content of the hallucinations.

XII. Recording

In each room a microphone is directed to the head of the patient's bed. The microphones are connected with an amplifier which feeds one loudspeaker. Everything going on in the three rooms can be heard through this one loudspeaker, but the three microphones can be connected separately to a second tape recorder (the first is playing music), so that, if desired, an important discussion or interesting reaction can be recorded for the patient to hear the next day.

XIII. The Use of Regression-Provoking Objects (and Actions)

The bed produces a regressive situation of dependence and "being-cared-for." A hot-water bottle adds to this, as does rearranging bedclothes, tucking the patient in, providing dolls, toy, bears, etc. A mirror also helps. Holding hands, sitting at the head of the bed, recalling past and present feelings of childhood, baby names, nature of self-image, and other recognition of the regression by the therapist, enter into the therapeutic process.

XIV. Reaction Types and How to Treat Them

(See Part Two Below)

XV. End of Session

The first step is to try to let the reaction run its own course, with the patient going to sleep or semi-sleep. Some patients ask for a sleeping pill, which can be: Seconal 100 mg; Amytal 200 mg; Largactil 50 mg; Nozinan 25 mg; or combinations of two of them. If the patient becomes depressed due to unpleasant hallucinations or a feeling that there is no future for him, 1-2 cc Tryptizol given intravenously will calm and soothe him and reduce the after-effects. In the case of severe disturbance, confusion or anxiety, Largactil 25 mg intramuscularly, gives an immediate result, but the next morning there is danger of hypotensions, or of fainting when standing upright.

XVI. Next Morning and Day

On awakening (at half-past seven), the patient gets a cup of tea. The results of the night may be discussed. The patient is seen home or will be met by a relative. The patient is not supposed to drive a car and should be forbidden to do so the whole day after. He is asked to write down everything he remembers and to add associations, such as childhood reminiscences. Usually he is seen a week after the session for discussion about insight, improvement, etc. If necessary, the tape-recordings can be discussed. Group therapy can take place the day after the treatment or during the week between two treatments. However, it is felt that in a town of no more than 100,000 inhabitants, privacy is preferred. During the treatment night the patients do not meet each other.

XVII. Intervals Between Treatments

The intervals between treatments may be, depending on circumstances, from three days to six months. One treatment every fortnight with a psychotherapeutic interview in between is, in my opinion, best. After good improvement the interval can become greater, from three to four weeks, and in the end treatment once or twice a year may be desired.

XVIII. Objections to Next Treatment

A. You often hear from the patient about: vomiting, bed-wetting, somatic complaints; anxiety about death, war, pains, certain archetypes; paranoid reactions; financial problems (these should be interpreted as resistance); nothing has happened—"I did not make any progress"; "I'm left alone too much" (deserted); nightmares between treatments; conscious or subconscious fear of recovery; vague objections.

B. Objections felt by the therapist against continuation of treatment: hysterical reactions which disturb the quiet atmosphere; destructive, aggressive reactions aimed at therapist, material or the patient himself; schizoform reactions; patients may seem too eager for next session (I haven't seen addiction, however); a prolonged reaction (I saw it seldom); depression (I have seldom seen it after LSD treatment; depressive reactions after Ritalin injection are seen more frequently and can last a few days).

Note: Suicidal tendencies appear more often than not; they are not an indication for interrupting the treatment, but should be regarded as a natural flight reaction that occurs often and must be treated accordingly.

XIX. Untoward After-Effects

Some months, even years afterward, the patient may experience an LSD-like reaction to severe fatigue, fever, alcohol, or combinations of these factors. This is, of course, unpleasant, but until now patients have accepted these occurrences without much concern. (If necessary, you can give Largactil and/or Vitamin B complex.)

PART TWO

1. Physical Reactions and Hallucinations

A. Sickness, vomiting, feeling of misery (see regressive reactions).

B. Urge to urinate (see regressive reactions).

C. Urge to bowel movement, rumbling in belly, bowel movement (see regressive reactions).

D. Clamminess, chill, shivering, trembling, complaining, wanting a hot-water bottle or asking for more blankets; shaking, motor unrest in waves, going from the pelvis along the spine to the head (see motoric reactions.)

E. Paresthesia in all parts of the body, including sex organs; ejaculations, orgasm (see sexual reactions); paresthesia around the mouth, in the mouth (regressive reactions); hunger, appetite for sweets; thirst, excessive drinking; palpitations, fear, demand for attention.

F. Headache, feeling of pressure in the head; sighing deeply, panting; changes in the bodily image, feeling of becoming very small; regression to baby-stage or foetus; loss of sensation in arms, legs, whole body, to the point where the patient feels he is dying. Feeling of disintegration, of the ebbing away of the body; of falling apart, exploding (starting in the head).

Advice: Take these reactions in some cases partly as stemming from resistance and/or being roused to protest against method. In other cases these reactions are seen only at the beginning of the treatment and are of a passing nature.

II. Motor Reactions

A. *Verbal:* Perseverations and reiterations, sometimes of significance, sometimes only poor fragments (see schizoform reactions below), in which the patient recites litanies of complaints; puts sensible or nonsensical questions to himself and answers these with a yes or no; shouting, screaming, cursing, laughing (see schizoform reactions); lip and tongue play (babbling).

B. *General motoric:* Fidgeting, sitting up, turning over, rolling over

the bed or the floor, crawling under the bed, walking up and down, wanting to get away (see aggressive reactions); rhythmic movements, often accompanied by sound, shouts; *arc de cercle* (see hysterical reactions).

Advice: Try to contact the patient by calling him by his Christian name, and as soon as he answers, try to hold his attention. Try, in the next treatment, a 50 mcg smaller dose. Sometimes these reactions are said to have been beneficial.

III. Aggressive Reactions

A. The patient curses, uses abusive language, threatens.

B. He expresses his aggression by motor actions such as banging against the walls, punching the pillow or trying to tear up the sheet.

C. Sometimes the aggression is directed against the hallucinated father; the patient then starts dealing blows he would have liked to have dealt his father.

The patient gets out of bed, wants to get away, and is difficult to control; a struggle may result.

Advice: Talk soothingly and call up memories of pleasant things. In an extreme case Largactil 25 mg may be used. Be very hesitant about any new treatment when psychopathic tendencies appear.

IV. Fear Reactions

Fear reactions often appear along with hallucinations of rape, war, death, decay, disintegration, insanity, dying, etc. The patient cries, yells, gets out of bed, seeks protection (as in bed with father or mother in early days).

Advice: Give intensive physical contact—arm around shoulder, patting, soothing. Next time, first give Amytal 65 mg, or 40 mg Librium, or 20 mg Valium or Tryptizol.

V. Hysteriform Reactions

Hysteriform reactions are aimed mainly at effect and thus are exhibitions. The patient acts dramatically, insists on attention; his gestures and attitudes are false. He gets out of bed and says he wants to leave; utters hysterical little laughs, talks in a childish voice. Will engage in aggression, yelling, wild behavior (see fear reactions). Wishes to be sexually approached, or threatened. Tries snuggling up to "daddy." *Arc de cercle.*

Advice: Administer 2-4 mg Psilocybin orally with the next treatment or stop this therapy.

VI. Schizoform Reactions

The patient with schizoform reactions will make faces, suck his tongue, lips or cheeks, or bend the body upwards in a rigid arc. He may seem to be in a stupor, with a deathly pallor, eyes wide open and pupils dilated.

This patient cannot be approached. His gestures will be catatonic; he will utter repetitions of fragments of sentences (that will be repeated often in following treatments). He will display disintegration, confusion and become unintelligible. There is often total amnesia about the whole experience. "Everything is mixed up"—the time scheme, the body scheme. Nothing is in place, the memory, the letters of the alphabet. The patient experiences this as one great chaos. Frequently the cause is too high expectations or difficulties in the relationships at home.

Advice: 25 mg Largactil I.M. or i.v. (beware of hypotension next morning). Next time a smaller dose of LSD, or give in two parts with an hour in between. No Psilocybin; be careful with Ritalin.

VII. Amnestic Reactions

The patient maintains positively that nothing happens or has happened; often it is a case of resentment and the hallucination is completely repressed. He declares he has seen nothing, has had a normal sleep and has forgotten everything. Sometimes he panics at the thought that he might tell something; he does not want to know the meaning of what may have happened. Sometimes he says, "I don't understand it at all." (See also schizoform reactions).

Advice: Co-operate intensively with the patient between sessions to trace the resistance to this type of treatment, etc.

VIII. Intellectualization

Intellectualization is marked by rationalization, would-be philosophy, theologizing, theorizing, blathering. The patient's attitude is negative, destructive, scornful, cynical. He preserves a sarcastic attitude and tries to catalogue and classify all experiences; is restless when he does not succeed. By his negative attitude he can suppress experiences and assert that he does not see anything, or that it is unimportant, worthless.

Advice: Warn patient in advance, and remind him, during the treatment, not to talk or think; what is most important are the sensations, the feelings, the experiences.

IX. Paranoid Reactions

The patient with paranoid reactions projects his suspicions onto the doctor, the treatment and the surroundings. He wants to maintain himself as an individual at any price, and to be able to understand and to explain everything (see VIII). He feels that he has been trapped or misled, and sees the doctor as a devil, a magician. He fears becoming insane or dying from LSD, and thinks the room where he lies is a prison (or he experiences the room as a prison). A less frightening reaction for the patient is a feeling of surprise. He wonders: is all this inside me, or is it being put into me from outside? Is the doctor's intention and/or mental background playing a part, or does all this really exist at the bottom of my soul? This is caused by the suspicion of being led from outside. He is

afraid of letting the initiative pass out of his hands, for who will take it then? He has hallucinations of voices giving orders (orders from outside!) and a feeling that somebody is sitting beside him who is not there, and/or that everything familiar is being broken up.

Advice: Explain beforehand and afterwards: "I told you so.... remember?" (See VIII).

X. Reflection

Reflection on himself by himself; honest self-examination of his place in the world, his relations with parents, and parents' relation to him as a child. Hallucinations of himself as a child. (See Regression.)

Advice: Don't interfere.

XI. Elementary Hallucinations

Hallucinations take many forms: colors and shades, little lights, beads, gems, a kaleidoscope, Persian patterns, curtains, carpets, Eastern temples, pagodas, images of Buddha, gold objects, "all sorts of things"; flowers, gardens, scenery; crabs, lobsters, insects (caterpillars, etc.), infusoria, amoeba. Accoustic hallucinations: sounds of rustling, crackling, whistling; whispering voices, jeering laughter; music. Tactile hallucinations: paresthesia in the whole body (see I.). Feeling of hairs in mouth; irritated vagina, urge to urinate.

Advice: Don't interfere; next time the hallucinations may have more meaning.

XII. Hyperamnestic-Regressive Reactions

In hyperamnestic-regressive reactions, the patient goes back to the first years of his life and feels himself becoming smaller and smaller. He asks for feeding and for toys. He has enuresis, hallucinations of nursery and nurse. Patient wants attention and is looking for warmth, affection, wants to be caressed and cuddled. Acceptation problematics: Experiences of birth (see XIV), feeding, hairs in mouth. Repetition of child-traumata.

Advice: This reaction is very therapeutic. Give the patient all the attention, warmth, security and care normally given to a baby. Help him through the child-traumata by an all-understanding, all-forgiving attitude. Continue working on this in verbal therapy.

XIII. Complex Hallucinations: Archetypes

Complex hallucinations often involve important religious concepts: the Holy Trinity; God the Father, the Judge; Christ; the Great Universal Mother; fairy-tale figures, animals (being himself an animal or being threatened by one); historical hallucinations, the court of Versailles, being a pirate, robber, knight; there are complex hallucinations with symbolic content of sexual and erotic experiences, coition (of his parents); foetal

experiences; fertilization, fusion of egg-cell and semen-cell floating in the amniotic fluid; being born through a narrow tube; feeling choked, etc.

Advice: Don't interfere during the treatment. Approach the components of feeling of these complexes during the verbal therapy between sessions.

XIV. Parapsychological Reactions

To the group known as parapsychological reactions belong: hallucinations of telepathy, clairvoyance, autoscopy, spiritualistic experiences (mother who recently died); memories of earlier incarnations (discovery of reincarnation); memories of former lives and deaths.

Advice: Accept them without comment.

XV. Mysticism

Experiences of mysticism can include union with God, Cosmos, Nature, Creation, all humanity, all living creatures; transcendence of the ego into "energy of living"; Nirvana experience; illumination; timelessness; a flash of universal understanding.

Advice: Accept it as peak experience (Maslow). Often (not always) these experiences are very therapeutic, but only, I think, if the therapist believes in them.

DISCUSSION

Dr. Freedman: Well, I have a question and comment. My question had to do with the training of therapists in the use of LSD. I would like to hear about their education. My comment is an impression that the European therapists I have met and heard from don't sound to me like sons of the American therapists; and I've been wondering why. It seems to me that they have absorbed LSD into well known, well controlled patterns of clinical work. They have not looked for short cuts, by and large; they have not advertised sensational change, and the dangers Dr. Cohen and Dr. Savage referred to are what we have to teach every resident in psychiatry, and what we always have taught them.

Obviously, either the problem of omnipotence, or the doctor being upset by the patient's feelings, requires training and supervision. The whole notion of supervising therapy with LSD, in this country, is unmentioned and should be built into experimental and scientific protocols since it is one of the best safeguards we have in clinical psychiatry. I think as long as we're looking for short-cut therapy, as long as we think of LSD as a miracle drug and forget that a drug always interacts with behavior, or as long as we incorrectly use it as an attack on the sins of psychoanalysis, we're going to throw out the baby with the bath water and we're going to be in trouble in this country.

If we use the knowledge that we do have (and you remember what hypnosis did in the nineteenth century—that all Salvationist movements intoxicated the people involved, and that's happened with LSD here) I think we could probably put this on a scientific basis in this country simply with some good, sound clinical practice. And that's my impression of some of the European work. Now, my question is; what are the indications that you employ for adding LSD to the therapeutic regimen?

Dr. Van Rhijn: Thank you, Dr. Freedman, for your remarks with which I quite agree. Now the indications for psycholytic treatment are: in the first place, cases in which no further progress is seen after a year, or a year and a half, of verbal psychotherapy, especially if there is an indication that deeply repressed traumatic experiences play a part. In the second place are patients with a compulsion neurosis, because it is known (internationally) that compulsion neurosis does not react favorably with verbal psychotherapy. You can start here early with psycholytic treatment (after you have known the patient four to six weeks). In treating a severe compulsion neurosis the value of psycholytic treatment is most clearly demonstrated, because at one of the International Conferences on Psychotherapy the very distinguished professors in psychiatry Schultz (Berlin) and Rumke (Utrecht) came to the conclusion that they had never seen a compulsion neurotic really cured by any treatment.

Dr. Fremont-Smith: I'd like to make one comment here. I'm not sure that it would be a fair picture to say that there is general agreement across several countries of Europe that psychotherapy with LSD as an adjunct is as acceptable as you have described it. I'm sure that there are a number of important centers which are using it in this way. In this country we have a very great variety of forms of psychotherapy, with and without LSD, and I think we will probably continue to have a great variety of forms of psychotherapy. Perhaps we can, however, find some central themes with more agreement.

The other thing that one has to bear in mind is that LSD should not be used as a means of getting at the sins of psychoanalysis, as Dr. Freedman said. Nevertheless psychoanalysis has, if not a sin, a great difficulty in its duration and cost. Therefore, there has been, and I think quite appropriately, a great drive in this country to find briefer forms —I do not like the term "brief psychotherapy"—but briefer forms of effective psychotherapy. This should continue because obviously if those of us who believe that psychoanalysis is an important form of psychotherapy were to agree that this was the best, and we would settle only for this, then the large majority of patients needing psychotherapy would not get any at all. So we've got to move on to find briefer forms that are effective. I personally very much hope that it will turn out that in many kinds of patients, or at least in a limited number of kinds of patients, the use of LSD will be put into one of the effective, briefer forms.

Dr. McGlothlin: Since no one else has come to the defense of the experi-

mental controlled approach, I feel I must attempt an answer to Dr. van Rhijn's rather devasting attack on controlled study. I think where psychotherapists seem frequently to be rather oblivious to outside perspective, or outside experimental approaches to evaluating the effectiveness of their technique—I don't think this is a particularly healthy position, to withdraw and evaluate one's own work and be oblivious to helpful suggestions which might be made by other disciplines.

For instance, Eysenck surprisingly concludes that it has not been shown that the groups getting the various types of psychotherapy performed were behaviorally better off than a control group which received no treatment at all. Now, this would be very disturbing to me if I were a psychotherapist; I would question whether I was, in effect, doing for my patient what I thought I was.

As an experimental psychologist, when I perform an experiment, like the current one we're doing, I'd be very disturbed at the end if I thought that all I was getting in my test was an attempt on the part of the subjects to please me. If I couldn't come to the conclusion within myself that something else was operative, I would be very concerned that I had wasted my time. Now, as long as competent investigators are concluding, are asking the question, and not refuting it, that they can't tell the difference behaviorally between a control group that doesn't get psychotherapy, and one that does get psychotherapy, then I think there is a need for controlled research in the traditional approach.

Dr. van Rhijn: In somatic diseases it is sometimes possible to prove a new therapy with only one patient. If a certain disease is known to be one hundred percent fatal and you should succeed in curing just one case of this disease, you have proved your point of view exactly like Banting and Best with their first patient. In psychotherapy, however, there is no general agreement upon diagnosis, favorable or unfavorable cases, or the outcome of any form of treatment. So I think you are wasting your time and money on controlled experiments and double-blind studies on subjects, patients or cases, which cannot be divided into fixed classes with a fixed diagnosis of a fixed disease with a fixed or sure outcome with some sort of therapy. The only thing I can believe in is carefully controlled studies in which certain patients can act as their own controls.

Dr. Fremont-Smith: I do believe that there is room for certain controlled studies. There is also room for the greatest critical look at the kind of controlled studies which have been offered to show that there is no gain to be had from within-patient studies of psychotherapy. I would like to remind the group—some of you may be old enough to remember—that there was a time before the antibiotic drugs came along, when tremendous efforts were made to show whether or not antipneumococcus sera of various kinds that were available were any good for pneumonia. Lobar pneumonia had an acute crisis, the temperature came down, and there was a very good way of judging recovery.

Yet, it was never settled whether or not the pneumococcus serum was any good or not. When you remember this kind of situation, very much simpler in all its aspects than psychotherapy, we should be very, very cautious about leaning too heavily on the kind of controlled studies that are suggested here as the *sine qua non* of good research.

Dr. McGlothlin, your comment, I think, is well taken; but there are two sides to it. Your point that psychiatrists are not always too ready to listen to the critiques coming from the other disciplines is well taken. On the other hand, I think that we don't know very many examples in other phases of medicine where the critiques coming from other disciplines have determined the issue. I really think that what we need here is a genuine multi-professional team in which the psychiatrist, the psychologist, the cultural anthropologist and whoever else is needed on the team, work conjointly, rather than having one other discipline, whether it be statistics, psychology, or sociology or whatever, point to the psychotherapeutic discipline and say, "This is the critique for your discipline."

LSD Analysis

A. Joyce Martin, M.D.*

LSD analysis is the treatment of neurotic disorders with this drug, together with an analytical and behavioristic technique. It differs from the usual LSD method as described by Sandison (Journal of Mental Science, 1954) and Ling ("Lysergic Acid with Ritalin in the Treatment of Neurosis," 1963) in: (a) not giving psychotherapy between treatments, except on rare occasions; (b) sitting with the patient during most of the treatments; (c) giving direct and active support to the patient of his emotional needs when necessary; (d) developing quickly a transference relationship with the patient and giving analytic interpretations when suitable. This method differs from psychoanalysis only in the more direct approach to the patient and his or her emotional needs, and acting the role that he needs you to take. This involves acting a different role and being a different person to every patient. This method was especially developed by my assistant, Mrs. Pauline McCririck, a psychoanalyst, who has been working with me in my clinic. This active participation of the therapist is needed, since the drug regresses the patients to the earliest experiences so dynamically that they literally feel like babies and are unable to cope or fend for themselves; but this is no longer frightening if their present mother, that is the therapist, is warm and understanding and can supply their needs at that level in some practical way, such as giving warm milk, holding their hand or putting an arm round them, and also talking to them at a conscious level, since consciousness is always maintained in the treatment, and reassuring them that it is good and normal to want these things, which all babies need and want, but do not always get.

It seems important here that we not only establish a new and more favorable or positive response to the mother stimulus, and so break down the former negative response of fear and frustration, but that we also give not just another artificial response. We should provide one that is fulfilling the natural laws of nature and, therefore, is more effective and truly satisfying than any other. In other words, we are not just giving a dummy, but something nearer to the original breast and the beginning of a love relationship. Once the patient develops emotionally from the oral to the oedipal phase, we no longer give him physical support in any way, since this might incur too strong a physical transference, which might then be difficult to resolve.

* Marlborough Day Hospital, London.

The whole aim of our technique is to make use of the special qualities of this drug, which stimulates the hypothalamus and endothelial system, which enhances the normal feeling response and automatically produces a transference relationship to the therapist. The other special feature of the drug is its recapture of early memories and experiences right back to birth or pre-birth. These memories are not merely intellectual recollections, but are dynamic experiences accompanied by strong abreaction and affect and the feeling of being a child or baby again. This automatically puts the patient in a dependent position and exaggerates his need for the parent figure, thus facilitating the development of a transference relationship. Once this is established, we can enable him to face up to all the painful factors in his life and upbringing, which originally the ego was not strong enough to accept; but now with the transference to the therapist, these things can be accepted. And it is, in fact, the therapist's job to point them out, so that they are accepted, however unpleasant, which is possible when the therapist, unlike mother, does not criticize or reject for these things.

For example, a patient developed symptoms of violent headaches and vomiting every time some unbearable aggression against her mother was coming out, which could not be faced and had to be converted to hate symptoms against the therapist. If the latter had responded with annoyance at the symptom of vomiting all over the bed and carpet, then the patient would have walked out and never returned. On the other hand, since the therapist did not show any annoyance, but only warmth and understanding, and explained to the patient what she was really feeling, which had produced these symptoms, the patient was able to accept it and said she realized she had been furious with her mother about childhood events which had been coming up in her mind recently. She had never dared show aggression to her mother, as she was dependent on and frightened of her, but now felt she could admit it to the therapist at any rate.

This is our aim, therefore; to develop the transference relationship as quickly as possible so as to enable the ego to be strengthened and allow the previously unbearable feelings to be accepted and assimilated into the conscious personality, thus relieving the conflict and curing the symptoms and eventually integrating the personality.

In order to develop the transference, we had to observe each patient carefully, particularly in the first interview, and decide in what role he needed the therapist most; whether it was the warm and loving mother to the unwanted child, or the cool, aloof mother to the power-driven patient, or the firm but kind mother to the hysterical patient. By following such a role we knew that the transference would have a chance to develop. Freud maintained that, in certain types of neuroses called the narcissistic neuroses, the transference relationship did not develop. This made psychoanalytic treatment very difficult and lengthy, and was the cause of much criticism. We have, however, had many narcissistic neuroses to deal with under LSD, and find that, if we know the right role to play, then they gradually can begin to respond and develop a transference. For example, a man of forty-nine, an obsessional schizoid, suffering an extreme

TABLE OF RESULTS ON 60 PATIENTS TREATED WITH LSD

Type	Number treated	Sex M.	Sex F.	Age Range	Number of treatments	Results Recovered	Greatly improved	Slightly improved	Not imp.	Follow-up after 6 years
Obsessional	9	4	5	39 50	6-50	3	6	1	1	no relapse
Schizoid-depressive	18	11	7	25 45	9-35	13	3	1	1	One developed a psychotic reaction and had to be admitted to hospital
Paranoid-Obsessional	7	4	3	25 48	15-45	6	0	1		One left to go to another country and wrote she needed further treatment
Hysteric	8	4	4	35 53	6-50	6	3			One slight relapse needing psychotherapy then stabilized again
Psychopath	3	3		28 35	20-40	3				no relapse
Homosexuals	6	6		30 59	15-40	6				One relapsed due to adverse circumstances of fiancee deserting him
Paranoid-schizophrenic	9	7	2	26 42	12-65	7	2			no relapse
Anxiety state	1		1		6	1				no relapse

Recovery. Denotes a radical change in personality with stable integration, and good adaptation sexually, socially, and at work.
Much Improved. A change of attitude with greater insight, confidence, social adaptation and fitness for work.
Slightly improved. Some increase in confidence and insight, but no real stability.
Not Improved.. A psychotic reaction developed necessitating removal to hospital.

sexual frustration causing tenseness, irritability, inability to communicate, and considerable depression, was eventually able, through the right attitude of the therapist, to communicate freely with her and eventually to have sexual feelings and show his penis to her, which was the first time in his life that he had done such a thing, but he felt pleased and not ashamed of it.

I will now give examples of this method of treatment in relation to a few cases in more detail.

CASE I

A man of forty-four, an obsessional phobic with paranoid anxiety and delusions about his appearance, extremely narcissistic and unable to make friends or communicate with people, came for private treatment through the hospital where he had been having treatment for the past three years without improvement. He had previously been a commercial artist, but had not worked for three and a half years, being utterly incapable of his work. Having lost all creative ability and living a monotonous routine life, he was afraid of everyone and everything, had become desperate and suicidal.

History: He was the only son, having two sisters, one older and one younger than himself. He had been very attached to his rigidly religious mother, although she was very strict and used the cane on him. Unfortunately, she died when he was seven years old, and a grandmother took over, whom he disliked. He was frightened of his father, who was a solitary type and he had never formed a good relationship with him, but had repressed homosexual feelings towards him. These carried much guilt and later were probably manifested in the symptom of acne.

Procedure: The therapist decided that the role to be played in this case was that of the warm and understanding mother, compensating for his mother deprivation. During the first session, she found that the patient had a handkerchief over his face, which he said was covered with acne, and he was ashamed to have her see it. He was unable to communicate and said he felt nothing. The therapist began to ask him about his mother's death when he was seven years old, how it happened, etc. When he told her about it stoically, without showing any feelings, she then showed great sympathy, murmuring, "How terrible it must have been for a little boy of seven, so devoted to his mother," etc., and this eventually enabled the patient to feel the incident more poignantly, so that he started to weep, which he had never been able to do before, and this relieved him a good deal and made him less tense.

During the second and third sessions, he chewed the pillow (a need for oral satisfaction) and continued to hold the handkerchief over his face, still saying it was covered with acne, although in reality there was none there. The therapist thought this shame might be connected with his sex life and asked him about this; he denied having any sex feelings now, but had masturbated occasionally in the past. He remembered boys at school doing this openly; but, although he wanted to, he could never join in be-

cause he thought it wrong. After his mother's death, he slept in bed with his father from the years of six to eleven, but could not remember any physical interest in him, although his dreams showed there had been some. His ego, however, was not strong enough to accept this, until the transference relationship had developed. The therapist therefore thought it advisable to stimulate his heterosexual feelings by talking extremely frankly about sex herself and how it was available and acceptable to almost everyone in this day and age. She thus influenced his superego, which had rigidly repressed his sexual feelings, to become less rigid and to be able to accept his instinctive urges as good and not bad so that eventually he lost his terrible guilt feeling. With it the acne delusion cleared up and also his agarophobia, so that he was now able to travel on buses and also to mix with people much better than previously. Eventually his confidence fully returned and he was able to get a job in designing and drawing. He is now in charge of a department with eight men working under him. He has heterosexual feelings and has asked one or two girls to go out with him.

Conclusion: After two years this man has remained completely well and happy, and has become emotionally stabilized. If he had been treated in a detached, classical Freudian manner, he would never have responded or developed a transference. The more direct approach of the therapist in giving him the sympathy and understanding he had never received but always wanted enabled him to break down his resistance, express his feelings, and form a new pattern of development. In behavioristic terms, one could say that the original conditioned reflex had been de-conditioned and a new response had replaced it. On the other hand, this could not have occurred without the development of the transference situation and an understanding of his unconscious needs.

CASE II

In contrast to this case, was that of a hypochondriacal man of fifty-two, with an hysterical overlay. He had previously been treated by two psychiatrists for four years for his sex phobia, but without success. He had become completely despondent and apathetic, without interest in anything, and often unable to work. He had always liked girls and had become engaged to be married twice, but when it came to the sexual act he became terrified and was unable to continue the relationship and broke the engagement.

History: He had been very fond of his mother as a child, although she was cold and aloof and later had a schizophrenic breakdown and spent most of the rest of her life in a mental hospital. His father died a few years later and he now lived with his sister.

Procedure: Each time under the drug he became extremely frightened, miserable and hysterical, saying he was dying and must have the best physician in London called in immediately, since he could not stand it. In his case, however, the therapist was extremely firm and reassured him that his fear was only due to his own instinctive feelings, which were so re-

pressed, and that he must now face them and the unconscious factors that his fear was hiding. He was gradually able to do this and brought out each time various sexual memories. For instance, he remembered seeing his parents together in intercourse, and sharing a bed with his mother, at eight, at a time when they both had measles. He also remembered strong physical feelings towards her, about which he felt terribly ashamed and so had never wanted to remember them. Now, however, with the support and understanding of the therapist, he was able to do so, and felt better for it. However, he had to go through a great number of these experiences and then found that he was transferring much of his early desire for mother on to the therapist and was able eventually to resolve this. He felt free sexually, approached a woman and had a normal sexual relationship for the first time at the age of fifty-three. Without the transference relationship and the direct and firm attitude of the therapist, this could not have been achieved.

CASE III

In another case, an obsessional schizoid man of thirty-three, the role of the therapist had to be entirely different. She noted, as she entered the room at the first session, that he gave her a quick glance, then he closed his eyes and never looked at her again for six sessions. She felt that he was full of guilty hostile feelings towards her and so just sat quietly by him, waiting for some sign or expression from him. He was sitting up in bed, very straight and rigid, with his arms stretched out along the bed and a tense hostile expression on his face; but he could not express what he was feeling and did not move or speak for one hour. Then he suddenly lifted up his arms and kept them stretched out for some minutes, then lowered one arm and pointed toward the floor and then withdrew his arm suddenly and stroked it. The therapist then very gently suggested that he had perhaps been feeling like a baby stretching out his arms to mother, and he immediately replied, "Yes, of course, that was it." The therapist then suggested that perhaps, when he was pointing to the floor, it might have been to some mess he had made; that his hand had been slapped, and he had to stroke it. He again agreed that that had happened, and seemed more relaxed and content. In this way, the therapist gradually won his confidence and broke down his mistrust and hostility. She established a good transference relationship, which enabled him to overcome his fears and to mature sexually to a genital level. This, however, was only possible as a result of the conscientious attention of the therapist who did not leave him throughout the whole of the session of five hours. She gave constant support and interpretation, without which the patient could not have resolved his hostilities.

CASE IV

The last case I wish to describe (of which we have made a film) is that of a man of twenty-five, a dentist, suffering from a schizoid withdrawn state, with lack of interest, lack of concentration, and depression.

The film of this case demonstrates the use of our combined direct and analytical approach to the patient.

His father died in a submarine in the war when the patient was one or two years old. He had a brother eight years older. During the first session he was withdrawn and depressed, then eventually went into a transcendental experience of seeing God and being on top of the world, with the sun at his back. This encouraged him to go on and in the third session he felt like a small child and wanted the therapist near him. She got on the bed beside him and he explored her breast, with his hand, and put his head on her chest and heard her heartbeats and said, "Tick, tock, tick, tock, don't ever stop beating or I will die." (Interpretation: I feel so tiny, I feel fascinated by your heartbeat; your heart is my heart, etc.; and I feel wonderful and secure.) This occurred during the first LSD session.

At the second session he was silent and withdrawn. Then he said that he was frightened and saw a cavern with a light at the end. The therapist asked him why he did not go in and explore it, but he said he could not go in without her, so she sat beside him on the floor with her head on his arm. He then covered his face with his other arm and curled up into a ball and went into the cavern saying, "I think I'm in the womb and it's red-hot in here and I can't breathe, but mother is breathing for me." Later he saw a light and felt he was going towards it and was being born; and then again he felt he couldn't breathe, but this time because he was choking with his mouth full of mucous. He felt very frightened, but the therapist reassured him, saying he had not choked, as he was here today (beside her).

On the next occasion he felt sick and developed a headache. He remembered having a bicycle accident at 12 years of age and being treated in a hospital and then having to stay in bed at home. He felt something horrible and frightening had happened to him during this time and went back to it over five sessions. The therapist had an intuitive feeling that there had been some sexual incident, and so she lay beside him. He remembered feeling cold and miserable after the accident and asking mother if he could get into her bed, which he did. She offered him her breast and later put her hand on his genitals. The therapist intentionally put her hand on his thigh and the patient said he felt a weight on top of him, which she interpreted as someone lying on him, so she got on top of him. This then brought back the memory that his mother had sucked his penis and made it erect and then pushed it into her vagina. He said he felt like a horse being ridden by a cowboy and that his mother was very masculine.

Later in the session he went through an extreme suicidal depression. He sat in front of the fire holding out his handkerchief and saying that he saw patterns of a tombstone on it and this was his tombstone. He then remembered feeling mad after the incident with his mother; and when she left him to go off to work, he crawled back to his own bed and masturbated for the first time. The whole horror of the experience came over him and he tried to forget it. He then began to see his mother as wicked and evil and ugly and he determined never to let her touch him again. He locked his door at night and hardly spoke to her for weeks. Eventually the whole in-

cident became repressed and he never looked at her or touched her again.

The suicidal depression continued for some time, and the patient would drive his car at 60 miles an hour up one-way streets, etc. He projected his hate against his mother on to the therapist at times, seeing her as ugly and evil, but with her interpretation about it he was able to accept that it was only his feelings about his mother, and he continued to come for treatment.

His next memory was of having been picked up by an older boy in the park, when he was fourteen years old, and allowing the boy to touch his penis and later seduce him, which he admitted enjoying and said it made him feel like a woman. Later on, he also had successful sexual relations with virgin girls, and he realized that he was getting back at his mother in doing this, but that he did not have such a good orgasm as when playing the female role. He now remembered doing this with his brother.

The transference to the therapist was now fully developed and therefore, in order to get him out of the homosexual stage of development, she praised a mutual acquaintance as being a fine virile man, and this made the patient very jealous, so that the next week he told her that he had made two conquests with virgins during the week. He then asked the therapist to lie on the bed with him, which she did, and he put his arms across her shoulders and said he felt merged with her as one person and they were going into a tunnel together, which was identification with his mother. Later on, he said he didn't want to be a woman any more, as he felt she wanted him to be a man, and she agreed she did want this, since he had been born a boy. He said his aim now was to become a man and possess her.

Conclusion: This man eventually became heterosexual; all his previous symptoms of depression and lack of interest and concentration disappeared and he settled down to his profession of dentistry with renewed vigor.

Discussion: These cases show that a different role has to be played by the therapist with each patient; a direct approach must be taken to replace the unsatisfactory responses with new, more satisfactory ones, supplemented by analytical interpretations when necessary.

Results: We have treated sixty cases in the last three years, all between twenty-two and fifty-eight years of age, mostly severe neurotics of the obsessional and schizoid type who have had previous treatment but with no success. Of these only two females have not responded. Although they improved to start with, they were unable to face up to their deeper conflicts and became too frightened to continue. One man, aged forty-nine, a paranoid depressive, after making great improvement and losing all his conversion symptoms, went on a holiday with a girl friend. She let him down and cheated him, and he relapsed. The others all remain well and only two come up occasionally for a psychotherapeutic interview.

Conclusion: This, then, is our method of LSD analysis, consisting of seeing the patient once weekly for LSD and playing the role specially needed to build up a transference relationship, which will strengthen

the ego and allow the patient to face up to hitherto unresolvable conflicts. This often requires both a direct and an analytical approach by the therapist, thus combining a behavioristic and psychoanalytical method of therapy. Staying with the patient during most of the five or six-hour session is a requirement.

The average number of treatments was twenty, only two having sixty. Psychotherapy between sessions was rarely needed. Results showed a radical change in personality in forty-five patients and great improvement with increased drive in thirteen. Only three discontinued treatment, possibly due to psychotic trends.

DISCUSSION

Dr. Fremont-Smith: It would be very difficult, I think, to agree on the criteria for what are good results. I think it's very important that we try to find some way of determining what criteria we use for determining good results. Among these criteria would be: when do we determine it? Do we have to wait until the patient dies in order to look back over his life, or can we do it three weeks after the end of therapy? Or when?

I want to bring out fairly early in the conference that these are on-going problems in psychiatry, not just in LSD. If patients get worse or relapse in therapy, what weight do we use? Dr. Martin, I hope you will comment on it, but it is a challenge to the problem that we face. What are the criteria—can we specify them? I'm sure we won't be able to agree on common criteria. That's beyond the limit. But to specify our own criteria might be useful, and we might be able to get these criteria, if they're not already in the papers to be presented here, included somehow in the publication. Would you want to make a comment on this, and then we'll have the questions?

Dr. Martin: I was very impressed with Dr. Savage and others who made very careful tests before and after treatment. But I must admit that I can't do that. I believe that the only result is what the patient says himself, and a practical one of what other people say about it, and what we know. For example, the patient wasn't able to work for four years before treatment—I'm just thinking of one patient—and then the result is that he is able to work and, in fact, take a responsible place as a commercial artist, having others working under him. Now, to my mind, that is conclusive that he's better.

Also, if he has been a homosexual before and now has become happily married; or if he has never had any sexual activity in his life at all—as many of our patients have not—and then becomes able to enter into successful heterosexual relationship. That, again, I think is a practical point, which one must give value to.

But I only go on these practical results, what the patient says himself, and which his friends confirm are true. But I don't know what other people think about it.

Dr. Levine: While I think that it is very good that we do a before-and-after evaluation of the patient, and while I feel it's laudatory to employ some particular methods, as Dr. Savage has done, for before-and-after comparisons, I feel this too is inadequate. While it may be all right on an exploratory basis, I feel the absolute necessity that we have a concurrent control group—that is, either a group of patients who receive no therapy, or a group of patients who receive what is considered an equally good or an alternative therapy. And I think only when we have this kind of control built in—that is, that they maybe receive an ordinary psychoanalysis, as most do, using the LSD treatment additionally—that we can begin to say that, yes, this treatment does offer some advantage over some other treatment. And to me this is the most meaningful—maybe a bit removed from the kind of work that you're doing so far—but it's one step up in the direction of knowing where this type of therapy would be most effective.

Dr. Fremont-Smith: That would be if we had good criteria for getting comparable cases; but this I think is also another area in which you would find very little agreement as to how you judge that two patients are comparable; or how many do you need in two groups to make them comparable?

Dr. Martin: I agree that this would be the best way, if one could do that. But again I agree with you that it's almost impossible; I mean, would you have the same therapist treat other patients by, say, psychoanalysis as we do? And then, there are very few patients who are the same, so how can you compare?

Dr. Levine: The question of the criteria is a very good one, and that's why I like what I call controlled comparative design. That is, if we used the same criteria for two different treatments, as adequate or inadequate as they may be, they did give us a basis for comparison.

Dr. Abramson: About five percent of drug addicts are successfully treated by any form of therapy. So, in the case of drug addiction, would you also insist if the method, say, resulted in a fifty percent "cure," that you would need this statistical design?

Dr. Levine: Well, first of all, the problem of the criteria then becomes very important, because the four or five percent that you quote I imagine are based on something like a five-year follow-up study.

Well, we're getting into two different areas here. One area we re discussing is what are adequate criteria for follow-up of narcotic drug addicts; and, two, you're asking me the question about the controlled comparative design in an illness in which we have a very low "cure rate"—would I accept the fact that the "cure rate" went up dramatically without having a concurrent comparison.

Dr. Abramson: Yes, that is my question, yes.

Dr. Levine: No, I wouldn't, because unless we had, for example, a very long follow-up on the group—

Dr. Abramson: Well, let's assume it's as long a follow-up as you wish. Dr. Fremont-Smith said until the death of the patient. Would you want that kind of a follow-up?

Dr. Levine: Well, unfortunately that is not such a good criterion—by a death rate.

Dr. Abramson: But I'm bringing you to a boundary condition which is absurd.

Dr. Levine: That's right. You're pushing—

Dr. Abramson: On purpose. I'm trying to reduce your argument to an absurd level. I recently had occasion to set up a control design of the type that you wish in trying to determine what helps intractably asthmatic children; and the design became impossible. If you are really scientific about it, you have to make all sorts of assumptions along the way, as Dr. Fremont-Smith pointed out earlier in our session. First, the number of siblings in the family would have to be the same. Then the order of siblings. I happen to know a little bit about this. You have to study the family pattern, the income of the patient, the religion of the patient, the attitude of the grandparents; and pretty soon you're setting up a system that's impossible to study. And to get anything done in a lifetime, unless you had an extraordinary amount of money and people involved in it, it would be impossible.

Dr. Levine: This gets back to the point I think Dr. Fremont-Smith made earlier; that is, when you give the same stimulant, or whatever it is, to an individual, you would normally get the same response, if we knew what the critical variables were, and then we could control them. At this point in time we don't know what all the critical variables are for most of the things that we do, and therefore we have to try and control as many as possible.

Dr. Abramson: I wouldn't agree with that. We have to control as many as reasonable, not as many as possible. And that is the split between your thinking and, I think, Dr. Martin's and mine. I think in planning research you have to be reasonable, not compulsive.

Dr. Fremont-Smith: Well, let's be reasonable, now, and get back to the discussion of Dr. Martin's paper.

Dr. Servadio: I was peculiarly struck by the resemblance between Dr. Martin's technique and the technique which John Rosen uses with schizophrenics. I think other people in this audience probably thought the same thing. Now, obviously we know that Dr. Rosen treats psychotics, whereas Dr. Martin treats other types. In my opinion—and I would like to know if Dr. Martin agrees—she creates, not a transference neurosis, which apparently cannot take place; but a transference psychosis in her patients, from which these patients can possibly progress.

Now, in Dr. Rosen's technique, he creates what he calls a "Neo-

Neurosis" in his patients, and I'd like to know if Dr. Martin also thinks that after the psychedelic experiments with her patients, these patients are treated on the basis of a sort of new neurosis with more orthodox analytic experience.

Dr. Martin: Well, I think it depends how much the patient can integrate at each level. If patients are fulfilled at all levels, and have the possibility, therefore, of resolving their severe oral regressions, they can integrate at that level; and then we can use a form of orthodox analytic approach. And in fact, of course, that happens, and when they reach the genital age, of course, we practically never use any physical contact whatsoever. We say if they really are at the oral stage they do need this; or when they are bringing out some traumatic memory which they cannot get at unless they have special support.

Dr. Servadio: Have you ever had an opportunity to discuss your method with Dr. Rosen?

Dr. Martin: No, I haven't.

Dr. Osmond: The point I want to raise is that question of comparison groups which I think is indeed true; this is desirable, but I think I want to underline, is it possible and feasible? By using this word "control" one may greatly mislead oneself. The control experiment, as I understand it, is that in which all variables except one are held constant. This is where it derives from. It would be my wish it would be otherwise, but this is where the chemists originally hit on this. I think that we are, in fact, trying to mislead ourselves. We make one classic error, the error of untrue precision. Now, there may come a time when we will be in a different position, and I think we can, by having long discussions on this point, end by holding another opinion. Most experiments are not being done this way. We don't even know yet whether it's the best way to do it. It would be very convenient, if so.

Dr. Ward: Perhaps stimulated by your statement that you didn't know of any other therapy, I've come up with one, too, that's similar, and that's psychodrama. Many of the things which you describe are the various principles which are put forth by Moreno and have been practiced for years.

Dr. Martin: Yes, I think that that can be very valuable. We do use that also. But I don't think that he can actually replace what we do. You see, our method is in relation to one person, be it mother or father, the parent idea; all neurosis must start probably with the mother. And therefore it's so important to the individual relationship to bring a real healing process, but I don't think the psychodrama by itself goes deep enough.

Dr. Ward: It does precisely what you say when it is practiced by people who are working with psychotics.

Dr. Martin: May I ask how long it takes?

Dr. Ward: The sessions themselves took about two and a half hours.

Dr. Martin: But for how long? Years?

Dr. Ward: Well, except for the type of what he calls psychodramatic shock, which is very similar to the single psychedelic experience, and which occurs very rarely, it's over a period of months.

Dr. Martin: And do they get back to the various feelings, dynamic emotional feeling?

Dr. Ward: Yes, depending on who the therapist is and what direction they go.

Dr. Kramer: I think that Dr. Martin is speaking of a very important point, which is being overlooked in some of our concern with criteria and objective tests. That is that she is taking into consideration some of the theoretical framework on which therapy is predicated. One of the important contributions that I think she is making is the fact that there are critical periods in growth and development. And one of the questions I've had in my mind is, is it really possible to make an ill person well without going back to these very early periods that have somehow not worked out properly? Is it possible, without going back —or taking the patient back—this is one of the things that Freud was very concerned about. He said that you really couldn't cure symptoms of any kind without abreactions, without going back to the emotionally charged incidents and living up to them, no matter how long you talk to patients.

Now, it seems to me that this is a very important theoretical aspect, not only from a psychiatric point, but from a biological one; namely, if the individual develops along a certain framework, a sequential development, and you skip these steps, is it possible to really cure or do anything for this person unless you get him back to this period?

I am working with a psychiatrist in Florida who works with an autistic boy who made no eye contact with grown-ups. He was a six-year-old Negro boy. Adopting the technique that Dr. Martin mentioned, I had him in my lap for forty-five minutes of eye contact—looking up at me and just exploring my face. This was a youngster who, it was said, made no eye contact. He was, as I say, at about eight months in his development.

Dr. Fox: Well, I was interested in what Dr. Ward had to say about psychodrama. I do think that we are able in psychodrama to recreate the feeling of being an infant, with various other patients playing various roles including the role of mothers. And we've had some people who've been coming for two or three years of psychodrama. I have a few people who have had hypnosis and LSD. You also get the feeling in these people that there's something almost interchangeable among the group. They are all opened up in one way or another to better contact. There's a great deal of body contact in psychodrama; there's holding, there's kissing, there's hugging.

Dr. *Martin:* Yes, I quite agree with you. I think there are great possibilities in that. I don't think it so successful in bringing back traumatic incidents which are deeply repressed and forgotten, you know. It

couldn't be quite as successful in that way. And also I wonder about whether the results are so firmly based. That's what we hope for, after six or seven years, getting the permanent proof.

And I would like to just say this. I'm so interested in the psychedelic approach that I don't know whether this mightn't be just as successful. But it seems to me that this will bring about getting in touch with the higher spiritual side of nature, repress all the early frustrations and conflicts, and therefore the person will function perfectly without these personal conflicts. But again, how long does it last? And in my opinion it probably doesn't last a lifetime. It seems to me we have to use both the analytic, with LSD, and the psychedelic.

LSD Facilitation of Psychoanalytic Treatment: A Case Study in Depth

Charles Clay Dahlberg, M.D.*

This is a detailed report of a psychoanalysis in which LSD 25 was used as a facilitating agent. While the treatment was not complete, it was far superior to non-LSD treatment with this man. He was especially difficult to treat because he had three mothering persons in his life, two of whom were in active conflict. He had a highly ambivalent identification with an inadequate father and he was saddled with a rigid, interlocking system of isolating, destructive defenses.

Aside from the inherent interest of the case itself, there is demonstrated here the effect of LSD in increasing fantasy life and adding to the richness of associations and emotions. The multiple identifications are also separated and the transference is split into source and reality, thereby making it therapeutically more available to the patient. Some examples will be noted of the kind of therapeutic intervention that was used. Between LSD sessions there was some carry-over of the above features as well as of an increased emotionality.

The technique was simple. Seventy-five mcg of LSD was given by mouth on an empty stomach every three or four weeks. The analytic session started two hours after ingestion of the LSD and usually went on for two hours. The patient then went home with an attendant who spent the night. There were three regular fifty-minute sessions per week intercurrently, during which there was some working through of the LSD material.

Richard G's mother died of tuberculosis when he was about a year old. She had been in a sanatorium for some time but had apparently had some contact with her son during the year prior to her death. There are indications of tension between his parents. Some time after the mother's death, the family moved to the west coast and a housekeeper, Mrs. Allen, was hired when the baby was eighteen months old.

Mrs. Allen was a grandmother who took over the family and made

* Training and Supervisory Analyst, William Alanson White Psychoanalytic Institute, New York City, New York.

Richard her pet. There were two older children, Amy 6 and Harriet 10, of whom she was less fond. Her own granddaughter was occasionally Richard's playmate and they planned to be married when they grew up. Richard, a Jew, called Mrs. Allen, a Protestant, Mommy and later wished he were a Christian. She took him to her family's Christmas and other celebrations. Mrs. Allen ran the home and disciplined the children. He recalls her threatening to quit one time when her punishment of one of the girls was overruled. After this her authority was clear. Mr. G. was a struggling engineer and frequently out of town. When home, he was affectionate with his son and also bullying. Richard remembers his father singing to him and also pointing at him at which the boy got down on the floor like a dog. This is not a painful memory but I think says something about the father.

Near Richard's sixth birthday, Mr. G. married Louise, a widow who had a son Herbert, six years Richard's senior. There followed a period in which Louise seems to have been the wicked stepmother. Mrs. Allen protected Richard but not the sisters. Louise felt that Richard was spoiled and this soon changed to his being bad. His father soon lost affection for his son and by the time Richard was seven, and broke his arm, the only memory is of father's cold cross-examination of him to prove that Richard was misbehaving when the accident occurred. Richard confessed, having learned by then that this was what his parents wanted. In fact he was doing what all other children in the playground were doing when he fell. Mrs. Allen was sympathetic and comforting.

Louise frequently spoke of her sacrifice in marrying into this poor family with three children and apparently through her contacts and business acumen succeeded in making Mr. G. a successful manufacturer. Richard's career was planned in agriculture, because he had poor eyesight, and he was encouraged to start a large garden to prepare for this.

From being a cheerful, well liked, assertive child he had become withdrawn, sullen, sometimes aggressive and fairly isolated. He grew to realize that the power lay on the side of his father and stepmother, and that he and Mrs. Allen were the outsiders. He was subjected to long lectures on how bad he was and how superior his parents were, and how good to protect him from himself by punishing him. There were also many demands that he love Louise, and she said in his hearing that he would be her biggest triumph. He started to switch his allegiance to Louise, whom he called mother. He and his sisters did much housework and Richard became a notable gardener in the neighborhood. His rejection of Mrs. Allen was complete by ten or eleven and she left the house when he was twelve, having for some time had no reason to stay but Richard. Her last years were filled with threats to leave. She died within a year or two, an event of little outward significance to Richard.

A period of relative peace followed. Richard was accepted, but not happy. He worked hard, especially in the garden. Amy became the scapegoat and Richard joined in the fun of picking on her. There was little loyalty between the children. When she was in college, Amy had a psychotic episode and received E.C.T. There have been no recurrences. She is now married and a mother.

Herbert went away to college to prepare to enter the family business.

Richard was miserable about becoming a farmer. When he was 17, he ran away from home. After a time an emissary of his father came to see him and got him to agree to meet with his father and mother. They were chastened, friendly. Richard broke into tears when he embraced his father. He was surprised at the realization that this act of independence had given him some power. Promises of better treatment were volunteered. He returned home and gradually conditions reverted to what they had been before Richard ran away. His father was openly contemptuous. Louise developed cancer and there were many emotional scenes of apology and recrimination. Richard was blamed for the cancer. After she died, Mr. G. married her younger sister Polly, who was very like Louise in appearance but seems to have been somewhat softer. Richard found her sexually provocative and she appeared in his sexual dreams. It is of significance that it was not until after Louise's death that Richard ever masturbated. He was then 18. The overt facts of his early sexual history are otherwise unexceptional.

He became more inhibited and withdrawn with time, but went to agricultural college. In a year he went into science and got a doctorate, at no time having any trouble with his eyes. He had few friends and tended to have trouble with his teachers, although at least one has been quite helpful and even warm to him since then. This behavior surprises the patient.

While in college he suffered from loneliness and depression and after reading a how-to-do-it book began to analyze himself. This consisted of sitting at his desk and writing down what came into his mind. To his surprise, his thoughts led to Mrs. Allen and he broke into tears with deep racking sobs. After repeating this experience a number of times, always with relief, he felt he had reached a need for professional help. He got this locally, briefly, and again briefly in Chicago, and while in the Army following graduation saw an analyst for 16 months. Following discharge from the Army at the age of 27 he moved to New York and consulted me. We started in January 1956 four times a week, for two years, cutting down to three times when his symptoms abated somewhat.

The progress with his previous analyst had been disappointing. Richard left him angrily and then returned for two apologetic sessions. The angry session was a triumphant one; the following ones were capitulations.

A letter to me from the last analyst said: "His wish to collaborate with the therapist is constantly antagonized by his notion that collaboration is weakness and he must prove he is strong. Any... indication of friendliness.... is reacted to by marked suspiciousness (similar to that seen in the paranoid)." My own impression was similar.

To me he said that he functions poorly, fears and hates authority, is almost always depressed but with cyclical depths of depression. He feels isolated and lonely, but uncomfortable and out of place socially. He swallows his hostility and is inhibited and afraid with women. He went to a prostitute at 25 because it was silly to be a virgin at that age. He has had a couple of affairs but is too anxious to get much enjoyment from sexual intercourse. He feels guilty following intercourse and expects the girl to be demanding and recriminating.

He spoke of his last analyst cuttingly but respectfully. He had a

careful catalogue of my predecessors' mistakes, and was sure I was better, but as time went on the catalogue of my faults grew. Nevertheless, he was careful to pacify me to the degree where he thought I would not discharge him.

I shall quote from a Rorschach done at the beginning of his work with me. "Mr. G. feels he is the object, the victim, to whom things are done." "At the deepest unconscious level his great need is for a reliable and close link. ... probably primarily with a mother ... (who) will give him love, support and protection." "He probably is very much aware of, and suffers from, his loneliness. But probably he is less aware, or unaware, of the tremendous amount of negativistic, stubborn, defiant forces that are, dynamically, probably the most important factors in his withdrawal." "[Yet even these wishes] are probably less repressed than a wish to free himself." "The very strong stubborn and oppositional forces in him are of major importance in causing the kind of deadlock in which he feels caught. He tends to experience the approach of another person as a grave danger and he protects himself by the described passive, impersonal attitude which is fed by a quite actively stubborn negativistic trend."

From the start it was clear that this was not going to be an easy case. My patient was sullen, suspicious and critical of anyone who might have been of importance in his life, including three analysts. On the other hand there was an impressive history of trying to get out of his dilemma. As for his past history, he had had and lost three mothers. His father seemed to contain gross elements of good and bad, and they had at this time an unpleasant relationship; he and his father corresponded, exchanged presents which each disliked, and his father paid for about one-half of the analysis. He felt guilty about Louise's death, and his rejection of Mrs. Allen. He called them Mrs. Allen and Louise—not Mother and Mommy—and had not been doing this too long.

In his analysis we did not make too much progress. On two or three occasions he was able to get some feeling about Mrs. Allen but felt humiliated by this as he did about any display of emotions. He was depressed on my vacations and felt better when I returned but was unable to make more than an intellectual comment about there being a connection.

He had a number of girl friends and his sexual guilt diminished somewhat, but the relationships were transient and his feelings for the girls contemptuous. He thought all of them inadequate or aggressive. Sexual enjoyment improved. He had constant running battles at work. Generally he was the loser and sniped at his boss but occasionally he stood up and gained some respect. These latter situations were transient. He lost one job because he created too much dissention. He was preoccupied with minor rejections such as a feeling of being snubbed in the hall, or of not being invited to a party. He had minor battles with his father and was hurt by Polly. He got fairly close to an uncle and aunt in this city and enjoyed and envied their son, Pete, 10 years his junior.

The transference was dependent and hostile. He was sullen and frequently silent. He complained that I disliked him and worried because he thought I treated him unfairly in various ways. He was concerned with

his lack of progress, depressed about it and afraid I would reject him. He was often sneering about interpretations. After his long silent periods he would complain that I was bored.

So after about four years I broached the subject of LSD. He responded eagerly and I have used it 26 times on this patient.

The first session was largely, but not wholly, taken up with his feelings that he was not doing well, that he was not productive, that he was disappointing and frustrating me. I interpreted this as his wish to frustrate me and his only way of hurting me was by self-sabotage. He had said he had done this to his previous analyst and he was constantly doing it with his father. One passage is typical: "Why do I feel so much conflict with you? Mostly I feel like strangling you. I'm leading an intense internal life now. Every once in a while I think it may not be getting through to you. I assume that you know about it. And, over and over, this feeling I'm failing. I'm sorry if I'm not helping, but at the core is this hard anger with you. I see us struggling to a standstill." I told him I was not fighting him and he replied that he was glad. "They saw me as hopeless, as bad...."

This session was much more productive than the usual undrugged ones but certainly not dramatic. After he left the office with his nurse he felt much freer to feel and to indulge in fantasies. This was almost always the case with him, though it gradually lessened and he became generally more productive with me in the room. This mirrors the change in transference. He also wore out his nurses fast—two or three sessions with one, and he didn't want to see him again.

After his first session he had stayed up most of the night and was very excited. He had a clear memory of the LSD events and had made notes. He has full of enthusiasm when I saw him. He told me he had been very emotional and talked most of the night. "I told the whole story of breaking my arm when I was seven, about my father's coming to the hospital to extract a confession. I can feel it now," and he broke into tears. "But I am embarrassed by the tears now. That disappeared last night. I'm surprised now that I can't talk about it. It was when I came home and tried to establish some rapport with him and he completely rejected me. What I feel now when I cry is how terribly kind this nurse was to stay with me.

"I'm glad it was nobody I knew. I knew he was only doing his job but I remember telling him my father had never talked to me. I think I was able to open up because he was a stranger. He was nice enough. Said the right things, but after a while I felt he was making demands on me and I got very angry—to hell with him. I had to force myself to be nice when he left. Then I felt mad at you. Maybe abandoned. At one point I felt convinced he wanted me to solve his problems. I was the patient and he had better remember that. You too. I was very militant about it.

"I was able to push myself over the barriers with ease. The sort of thing that's so hard otherwise. I had a series of fantasies about you. It's hard to tell them now. I had supreme confidence in you. I was lonesome for you. I would never forgive my father for what he did to me. I will become schizophrenic and fix you. I was demanding that you promise not to abandon me. I could make you do anything because I was the baby but

then I was not sure you would do what I wanted. I called you to tell you I was too excited to go to work and you said I had to. I refused and slammed down the receiver. Then I called back and said meekly, 'Do I have to go to work?'"

This was pretty impressive to both of us and was a tremendous amount of pretty naked dynamics.

During the time between the first and second session we spoke about the findings, but it seemed largely a period of waiting. A brief summary of his thoughts in their order of appearance in the second session follows:

1. Fighting dependency
2. Tries to please and then resists
3. Maneuvering to outguess me
4. Feels he is a disappointment to me and to his father
5. Desires to have me stay with him all night instead of a nurse
6. The suffocating feeling is that he wants to get to his father but never will
7. Hatred of father
8. Wishes that my wife and I could be his father and mother, but knows he can't really ever ask for anything important, so, to hell with it

The night following this session was less dramatic. He was competitive with the nurse, which was not totally a distortion. They had to top each other. He decided he eventually had to give up being a child. I went over my notes with the patient who commented that he talked less with the nurse about his father because he had talked more to me about him. He said he was depressed. "I realize why I can't get close to anybody. Dad had to humiliate anyone who got close. He had someone to defeat. I never had anybody. That's one reason I don't want children now. I would do the same thing to them. I can feel it."

About ten days later he was visited by his father for a weekend and described it to me under the influence of LSD. It was the most satisfactory visit he had had. He saw his father's compulsion to tell people what to do. "He really made a fool of himself. I sat back and watched. For the first time I didn't smooth it over. He was very brutal to a young boy cousin. I can see how he must have been with me. Then, after two days, Polly came and I changed. I couldn't handle the needling remarks, and became withdrawn, sullen, and depressed. I hate them."

I interpreted to him the dependency in the above, which he bitterly denied, but then said he knew what I was talking about. However, he wants nothing from them. Just revenge. Then he recalled a couple of times when Louise had protected him from his father's rage and he cried, to his surprise. Later he spoke of how dependent he was and commented on the radical change when Polly came. This was certainly the most expressive emotional session the patient had had while not under the influence of LSD.

The next note I have is that Richard told me he was becoming interested in what he likes. He had been reading poetry, to his surprise. He likes

the rhythm. He also enjoys folk dancing which he has done for years. He feels freer now to enjoy it. Defensively he said, "It may be sissy but I like it."

In the third LSD session he fantasised a session with me while waiting. Everything was designed to please the doctor and he felt degraded. When he looked into the mirror he was surprised that he looked normal.

He mentioned his grandiose desires and called his "studied inferiority" a farce. He was grateful that I was not pressuring him to do better and became angry at a remark that he does pretty well.

He then got to Mrs. Allen, and told of pretending not to want something so as to get it. He resented having to do this. But she was the one person he could relax with. He eventually became false with her.

He has many tender feelings about her but she had no power. "So I just lost touch with her. She died for me before she left us. That's why I didn't cry at her funeral."

He says he only scratched the surface about Mrs. Allen. There are more feelings—pro and con—feelings he is afraid to get to.

In our discussion following the session he called it a farce and was quite detached and apathetic. He responded to this session by making a comparison between his feelings for the nurse and Mrs. Allen. Both were powerless and had to be assured they were loved. He wanted someone who counted to love him. And he always feels that the girls who love him are nobodies.

I read the account of the hour and he sneered at it while admitting its truth. In the following session he reported that he had had many pleasant thoughts about Louise. This was a new twist.

In the fourth session, he expressed his contempt for the worthless Mrs. Allen and his intense fear of Louise. Both feelings were expressed toward me. Following this, he had a dream in which Mrs. Allen said, "You never forgive anyone, do you?"

Richard went back to the coast on vacation at about this time, and visited Mrs. Allen's daughter. He got some snapshots of Mrs. Allen from her and, while driving away, had a fantasy of returning and finding Mrs. Allen there. He broke into such tears that he had to pull off the road. He realized that he unconsciously expected to find her that day. Richard said his second analyst had told him that he had the feeling that, if Mrs. Allen were only around, everything would be all right. By the time the patient started seeing me, these feelings were well covered up.

In session five he resented the feeling that Mrs. Allen wanted him to reject his father and Louise. He realized that he had left out his real mother and he recognized that a part of him loves his father and it is harmful to feel such contempt for him. He built this up out of seeing Louise kick his father around. He wanted to be in their club. Now he won't let the doctor in, because the doctor won't let Richard in his club.

His later fantasies were of helping and loving his father. The realization was clear that he had once been the center of his father's life, and then of Mrs. Allen's. But there was always some insecurity about her position and he wanted them to marry. There was a movie-like fantasy of his

father taking him and his sisters to visit Mommy. The family were all together again. He resented people who "have a right to be loved," and in the next few days he rejected a girl who was too fond of him. "She didn't really love me and was just a nobody." He quickly saw this as transference from Mrs. Allen.

In session six he was ready to pick a fight with his father. He recalled the fear with which he came home every day. Louise and his father worked to turn him away from Mrs. Allen but achieved only a stalemate. He was interested in his father's wedding, and wasn't hostile to Louise from the start. Louise always said there was no difference between the four children. "In her own mind she was fair correcting for the fact we were bad." For almost the first time the patient started using his childhood names for Mother and Mommy. However, even after this, he generally did not.

Later he had a fantasy of many children, each with a beam of light on him. "That was their mother. Each had a mother. Then I had a beam on me too. It was overwhelming." He also remembered that when he spoke to Louise he made a pushing-away gesture which she called to his attention and made him stop.

In session seven the patient saw the same action through his own and Louise's eyes. The main content was fear of me in various ways. When he got home the parts fell into place and he realized that what he really wanted was to have his own mother—not always to have to use somebody else's. Many episodes fell into place, including some new feelings about the Jewish problem. "The Jews were always guests. They needed their own home. It shows I identify with them. I didn't at one time."

This was followed by a much more self-respecting attitude at work.

In the eighth LSD session he was trapped up again in his ambivalence toward Mrs. Allen. He talked about how he insisted that people reject him, and the importance of this with me. He frequently pointed out how I'm only an analyst and really can't take the place of his father and mother, but the thought struck him that I do offer a lot of support and much more than he's willing to accept. Then he went into his fear of loving Mrs. Allen and how he had to make the choice between her and his family. There was no good solution.

In session nine he recognized more his need to be in Louise's "club." It was not a lively session and the time following it was unproductive. This was about nine months after our first LSD session.

I interpreted what had happened as his building up defenses under LSD, as he had done in his earlier life, and warned him of the danger but pointed out that now we could see what he was doing. He replied that he was worried about this also. The idea that he must experience his dependency made him hold back more. He said he thought he has been able to affect his father more than he had previously believed and gave examples. "There is no doubt I enjoy frustrating you, my boss, father, the nurse. I try a lot of the time to give the impression I'm getting close to you and making progress. I do the same with Dad. Half-friendly, half holding at a distance. I was going through the motions of being friendly with you but I never really feel honest because my desire to kill you doesn't come out. It's

clearer with Dad. I have a fantasy about sticking a knife in his ribs and twisting it. Of strangling him slowly, not very emotionally.

"This is a re-enactment of what has been done to me also because it isn't very passionate. The beatings must have done a lot to me, but the cold withdrawal is what did it too. He must have felt guilty somewhere. He knew what I had been like. He saw me change from a lively child into a robot."

Shortly after this, since silent periods were becoming longer, I assured him he was not forced to talk all the time. This served to loosen him up somewhat.

In the tenth session he called Louise a Jewish bitch and rejected everything Jewish. His father, who had become quite religious, was not so before marrying Louise, and she was the patient's first contact with anything Jewish. Being Jewish also meant he couldn't marry Mrs. Allen's granddaughter. There was more about revenge on his father which took on the characteristics of success for himself as opposed to failing in order to hurt his father (and me).

The day following the session he said: "Not only was I rejected and terrorized by my father but he kept making me feel it was my fault. This is what I feel I must straighten out with him. 'Why did you reject me?' Now I'm not convinced again. It's as if I were back there again and he was making me accept his opinion... What I feel now is terror; in a while I'll be depressed and then come out of it by hating his guts."

Richard had been seeing a divorcee, with sons whom he has been enjoying—especially the younger, with whom he played and whom he encouraged. The older, more reserved boy brought out the hostility in Richard. He recognized the boys as two sides of himself—before seven and after nine.

The eleventh LSD session started with his thinking that a hunger strike he had been on had some effect on his father—"and it is like a hunger strike; I deprive myself—I want him to still be a good father, but anything I take from him means that Herbert is superior. He took Herby into the business but offers me charity. That's why I can't take anything from him. I'm not good enough to be his son."

Then Richard recaptured the delightful feeling of being loved and accepted by Dad and Mommy as a little boy. "And Dad said it could have been good for me if I had accepted the family. In fantasy I said he was lucky that Mrs. Allen had come into the family and loved his son, and did he expect me to throw her away, like an old toy, when he married another woman. And that he had thrown me away like an old toy when Herbert came along.

"I couldn't succeed with him. I was successful as a farmer, but this made me inferior so after a while I couldn't work long. I had cramping stomach pains and complained to him that I wasn't strong enough for that life."

In the twelfth session he told of playing with his girl's two sons, and I realized that this is what has left me—the ability to play and have fun like I did a little with them."

Then he rejected his father's impossible demands, and a few days following this he commented that his relationship with girls was changing. He is meeting some interesting ones now, and it doesn't surprise him that they can be interested in him.

The thirteenth session started with intense hatred of me. After this, little that was comprehensible came out until after more than an hour, when he recalled a dream of the previous night.

"I was in a tunnel. I asked directions of someone. He was using the memory code system to give them to me and I explained that I understood the code. Only a few people do." That completed the dream. He said, "It's as if I were communicating with two different means. I think Mrs. Allen and I had this special code of our own. Your being here scares the life out of me. We communicated in one way when Louise was there and one way when she wasn't."

I asked him if my threat was that I will break the code and he said that the real threat came when he forgot the code.

"I'm afraid of establishing the code with you. I denied that I told you about the system. It's true that I just gave you the general idea. It's interesting that I spent a long time recently explaining the system to this girl I liked. I translated the word 'normal' for her and explained it. Curious. With my cousin Pete the last thing he said was in the code. We played in it."

I remarked that people who love each other have a code, a special language, shared associations.

He laughed and remembered asking Mrs. Allen if he knew everything. She had replied that if he did he wouldn't ask that question. "It's the sort of thing I was always asking. You still scare the life out of me but I feel better just remembering a few things like that."

I said I thought it had to do with his letting me in, and I continued, saying that the most heartening thing that had happened in his analysis was the change in the people he lets himself know. He told me not to build it up too much. "It's a real feeling, I can't let you in on. It was the feeling that she was on my side. It wasn't until later that I realized that. I took it for granted. I didn't care about her false teeth which made her inferior at one time. That only meant she was old and might die and go away some day."

"This tremendous feeling a baby has of wanting to live—you know, participate, grow." I said. "The opposite of what you've described all the early part of the session."

"Right," he replied through sobs. He was crying now. "Tremendous. This was the feeling of self hatred. That nobody could do this for me. I know vaguely that she did once. I went over to the enemy and didn't live—I was in an artificial, dead dream-world. I hate Dad for taking me into that. He didn't know what it was all about. I'm sure the beatings and lectures I got were to break up the special code. But before Louise came he didn't mind. He even approved. Maybe her daughter minded a little my calling her "Mommy!" I asked if "Mommy" was the code word. "Yes, I

think so. I'm very scared. It is!" And he cried bitterly. "This is when she got the message that I had to close her out. When she said I hadn't called her 'Mommy' for a long time. I didn't really want to. I just refused to think of it for a long time. It was a terrible thing."

Richard forgot the above, but quickly remembered when I reminded him. For some time he tended to minimize it.

He concentrated for some time now, between sessions, on deflating episodes in his life and commented on how much he does this with other people. His relationships with girls consists of getting them attached to him and then letting them know he never cared. This was done to him by his father when he broke his arm at seven, and again, at ten, by Mrs. Allen when he broke his arm again. These episodes marked turning points, but there were many less dramatic episodes such as the repeated dinner-table occasions where he would burst out with something. Louise would say coldly, that he should repeat that very slowly, after which they would just look at him.

This brings us to about the end of the first year of LSD.

In the fifteenth session he mentioned his father as having been castrated by Louise and he himself accepting castration, like his father, when he returned home after running away. However there was a change after Louise died, and he was able to masturbate. The big change in his life, he says, since he started analysis is that he can enjoy sex. Following this hour he stated that he had not really wanted to come alive; just to get strong enough to go back and beat the crap out of his father. "I didn't want to give it up, and I've been doing it in the transference by defeating you."

In the seventeenth session there is a good example of how difficult it is sometimes to follow a patient who is under the influence of LSD. He was having two fantasies simultaneously which were reported in this way.

"I saw a little boy drowning. I asked Daddy if I should throw him a line. He said I should let the little boy drown but pretend we tried to save him. The boy was me. This is what Dad says now, 'I wasn't so good but let's pretend I was. I'm old. Don't stir things up!' And I think that's how I act."

Then after a diversion of about five minutes he said, "When I was throwing him a line I wasn't competitive. I thought 'Poor Daddy, he's drowning. There are lots of things he'd never learn, but I would learn enough for both of us.' I can't help myself—I have to accept him."

Richard later explained that in the fantasy the child was himself, and also his father, and that what was meant was, "Daddy, I know you don't accept me as a son but I can't help it, I have to accept you."

The following day he reported that he had thought of describing Mrs. Allen to me as "a no-nonsense woman. She wasn't like all those other sick people I was around. She wasn't tough or hard. She didn't love my sisters, but didn't make any pretense of it. She did her duty towards them." I commented on this being the opposite of a phony and he agreed, and added that it was the opposite of being a weakling. "She wasn't afraid of

being disliked or of liking someone." He said he was talking about the early period that he hadn't really gotten to yet but felt optimistic about getting there.

He then referred to an item about mutual acceptance, which had come up earlier. He was surprised that I hadn't understood him. "After a while I realized that what was going on was that I was reversing our roles. I was teaching you and being aggressive, even hostile, but accepting. You don't understand that when I am being aggressive and contemptuous I am being friendly. Nobody understands that—they can't, of course.

"This is what I got a lot of. Lectures on how bad I was and how they were helping me. The more I admitted I was bad, the better I was. It's a good thing people don't generally think that contempt is love, but I seem to. These things are all upside down with me.

"The whole family is bullying. Dad did a lot of it and then he'd be nice and play with me. Later, after Louise came along, he was degrading. I was called a skunk and a pig. There must have been a period of intense struggle and then I lost. Before that I had quite a bit of self respect."

A period of two months now intervened between LSD sessions. This was in part due to his growing resistance, based on his anxiety about getting closer to me, and feeling smothered. A factor in this was his fear of a rebellion against Mrs. Allen which he feared was brewing.

During this period he spoke about his growing discomfort at not calling people by the names he knew them by, i.e. Mommy and Mother. He also talked about his sense of impermanency in relationships. He had been threatened with desertion in all his important relationships.

He remembered that he had once said while under LSD, "I don't have to relate to you, I'll be leaving soon." He was waiting for me to make the first move about scheduling another LSD session, and didn't expect it to come. This was followed, though, by the realization that relationships live on even after death. His aunt, he noted, still speaks of her husband as if he were alive, although he has been dead for three years.

Some time after this he had a fantasy which overwhelmed him emotionally as he was telling it. In this fantasy a newly dead person had to be helped "across" by another dead person. This could only be done once by each soul. If not helped across, the person would stay in some in-between state. Mrs. Allen did it for him.

He was surprised by the intensity of his reaction, and thought it had something to do with me. I said, "I would do this for you?" and he replied that it must be something like that. I said he seemed to be asking for love. He agreed and countered with, "But how can you love me?—you're only my doctor." I reminded him that he had said I give him more than he takes, and suggested that the problem was one of accepting. Thoughtfully, he replied, "Yes, I've said that." It should be noted that a fantasy of this richness had never been encountered before LSD treatment and this one came out some weeks following administration of any drug.

In his next hour he combined acceptance and rejection in a fantasy where he had a fiancee, and scorned Louise.

These episodes are the first evidence of anything approaching an experience of love in his adult life.

His step-brother Herbert came to visit and lamented on his trouble with Richard's father, as a know-it-all who makes mistakes, and is seriously hurting the business. This confirmation of Richard's observations was pleasing but caused him to feel sorry for his father. "In the past I was busy proving Dad was right and that I was bad. I'm better able to see how wrong he was but I still identify partly with him in his rejection of me."

In the eighteenth LSD session he said that Mrs. Allen was the one flaw in the argument that everyone was against him. He had a hint of deeper feeling—of being left alone, and crying until he gave up out of frustration and helplessness. This gradually was changed by Mrs. Allen, and he thought he could remember a change in her attitude toward his father, as time went on. At first there was respect for him but later she saw his hypocrisy. Richard then remembered that, after the marriage to Louise, the family moved to a new neighborhood, and the children were cautioned not to tell anyone that they were two families who had just come together. This unity was merely for show and divisions were present within the families, never clear-cut. In his fantasy which followed, Richard gained a feeling of ease by siding with Mrs. Allen.

While at home following the session, he first recalled stories that were told him of being taken to visit his mother just before her death. He thought how cruel this was to make him separate from her again. He felt he must have cringed upon seeing his father. He had fantasies of resentment toward both his father and Mrs. Allen, but realized she gradually won him over and he became trusting. "But there's no doubt I had reservations." He remembered an incident when a tramp came to the door and he was terrified that his Mommy would be stolen. When assured she would not be stolen, he was embarrassed, thereby demonstrating his fear of showing a commitment.

He gradually became confident of Mrs. Allen's love, and he felt the power of a child who is loved. This confidence and power, he said, were what interfered with his submissive role with me in my role as his father. It was hard to talk in the room with me because he had an urge to take the microphone of the tape recorder and say, "This is Richard G. and I'm here to tell you what's right."

The tenor of his feelings changed as he relived later events, recalling his father's lectures on the advantages to be gained by loving the other side of the family, and he could see evidence of this in the superior position of Herbert.

"So when I did reject Mrs. Allen, I did it wholeheartedly. I even felt good enough to run for office in the eighth grade after Mrs. Allen had left. My assertiveness was too much for them though, and around fourteen disillusion set in. I had to learn to get things by self-denial. Dad said if you don't ask, you may get to use the record player. That's the way it was with the mike. Wanting to pick it up and assert myself inhibited me and I could scarcely say anything."

He told me he went through the cycle of loss and regaining many times that night, and that the only thing that made it possible to think of the loss of his mother was the knowledge that he eventually came out of it with Mrs. Allen. He realized that the loss of his mother was not his father's fault, and I pointed out that it was his father who had gotten him Mrs. Allen. He said he was beginning to see that he didn't have to hate his father so much.

The theme of his expectation of having his separation anxiety exploited came up repeatedly and he had vivid memories of how this was done until sullen withdrawal became his only response.

During this time he tested his strength by acting out a protracted rejection of an aunt he was fond of and close to. She had delayed him on a loan he wanted and this had so enraged him, he went to a bank for the loan. Then he brought her around by being cool. This sort of game seems to have been common in all branches of the family. He noted that while he had little respect for Louise, she at least fought for her son and called his father a "damn eunuch."

Some of his insight was translated into his reality situation when he said he realized why girls bore him after a while. "I expect to relive the dependent 'Mommy' relationship and as soon as they begin to show some dependency on me I become bored and contemptuous." He was able to avoid this on his last date with his present girl and thereby was able to respond sexually. "I think suppressing the anger suppresses sex too, so I just end up bored."

His twentieth LSD session consisted largely of hateful fantasies about his father which he had to keep to himself to prove his autonomy. He felt he was hanging like a dead weight around his father's neck throughout this.

He had been more successful in his job and had moved to a new department with much more scope and challenge. We felt this was the cause of the static quality of his fantasies when he reported a fantasy of his bosses coming at him with a big pair of shears to castrate him.

I expressed some confidence in his resolving this and doing well but noted that he seemed to have to prove it to himself yet. This expression of confidence allowed him to breathe freely for the first time as the transference tie to me as a castrating father was suddenly dissolved.

Richard then remembered a recent scene in which his father had jokingly remarked that he had taken Herbert into the business and left Richard out. "I fantasised my sisters were there and I told him to hold onto Herbert because that's all he's got. He doesn't know it's serious to throw your son out and then joke about it. He's phoney and so am I. I play the game so it s all right for him to."

Richard had felt so invaded in his life that we thought it might be useful for him to be able to take LSD at home with only the attendant (whom he didn't have to talk to) present. He appreciated this chance to have privacy to work out his relationship with Mrs. Allen. Louise was constantly trying to get him away from her. She had even intercepted his post cards to her when he was at camp.

He said he never knows what he wants but at seven he did. He was given a tool set and the first thing he did was build a box for Mommy. There was no question for whom he wanted to do it. Two years later when he made something in school he wasn't sure for whom it was.

He had many conflicting feelings about me and was suddenly relieved when he realized he didn't have to love me or anyone else. He could find his feelings for people on the basis of experience with them. His note to Louise when he ran away from home was, "I can't love you the way you want. Maybe some day I can but I can't now."

There had been some stealing in his department and he felt accused and fantasised speaking to the boss about it. "If you don't trust me, I'll resign." He remembered the many accusations by Louise and how he had gotten to the place where he didn't know what he had actually done and what he hadn't. "I felt that there might be a side of me that I didn't know about that might really be stealing."

After these two sessions he felt that the need for being alone to work out his problem with Mrs. Allen was passing and that his problems with his boss were coming into focus. For this reason he thought it would be more useful to try to let the drug have its full effect in the usual way.

He was beginning to have some heady thoughts brought on by his success in his work. He was fearful of mentioning fantasies about receiving a Nobel prize someday. I told him I could conceive of such a thing and that he might well rise above me. His reaction to this did not come out until his next LSD session.

He thought of this as having his cake and eating it too. Again the themes of his being displaced by Herbert and of his father's competitiveness with him came to the fore. Then he fought with his boss in fantasy but happily remembered that he had heard that his boss had gotten mad at someone else. He said, "It pays to talk to people. You find out what a person is like and that he doesn't treat only me in the irritable way he sometimes does." He was alternately emotional and defending himself by feeling it was all silly.

He could see that his boss, while a moody man, was confident enough to help his subordinates succeed and then with great emotion had a fantasy of what he really wanted—his father saying "Son, I'm really sorry."

"I can clearly remember the time I felt I amounted to something. It was all around Daddy. When he came home and played with me. It's hard to believe that people can be like this. Like sitting on his shoulders and his helping me to be taller than he is. I wonder if I'm completely wrong about him. I don't see any of what I want in him now."

At the end of the session he spoke of enjoying competition when he had someone on his side—referring to me, his analyst. Later, feeling a fool, he asked again if I thought he would make it. Sobbing at my assurance, he said he'd just have to risk my thinking he was a fool. On the next day an additional ramification of the problem came out. Any friendliness he showed his father is an admission of inferiority to Herbert because it shows that his father was right to pick Herbert over him.

In LSD session twenty-four, these themes about his father and Herbert

were repeated in many variations and ran parallel to fantasies and thoughts about his boss and a colleague in the department. A significant fantasy was about his father's marrying Louise. Father asked why he's unhappy and he replies, "I can count on you now, but what about the future? What if you go into business and want to take one of your sons in? Which one will it be?" His father replies, "Don't worry, you are my son." It took him a long time to get this fantasy clear. It wouldn't come out right at first.

Another fantasy was of telling his boss to "go away. I'm in a bad mood." In the fantasy he got away with this and thought he would in reality. Actually he was getting realistic enough at work to develop a pretty good working relationship with his boss and colleagues.

Following this session he said he was strengthened by admitting to what he wanted. He called it an ego-building exercise he should have gone through in childhood and then remembered Mrs. Allen telling him not to let people step on him. He felt she had some contempt for him at that time. It was when he started agreeing with Louise that Mrs. Allen's protectiveness was a bad influence and so he told her to stop trying to get him out of trouble. "I have emphasized the pressures on me from Dad and Louise but there was another side—her contempt when I started to knuckle under."

The next LSD session was a three-hour one. He was looking forward to it eagerly. So he scheduled too much work for the morning, came late, spent his time in fantasies of justifying himself for being late, felt guilty, wanted to make up for the guilt by pleasing me in saying what he thought I wanted to hear, became angry at this projected demand and said little. This typical operation is at the core of his inability to do what he wants which in this case was to come here and enjoy his own productions. His demands ended up being projected on me in a paranoid fashion and subsequently resisted.

In some of his more open moments he recalled a fantasy of meeting my wife and having an affair with her. Another memory was of Louise claiming the gardener made advances toward her. Richard thought she was seductive and felt his excess guilt about being late related to the sexual fantasy. He thought he had interpreted Louise's demands for love in a sexual way. When at the age of seventeen he returned from running away, he got an erection when she embraced him.

I commented that most boys are moving away from their mothers about the time she was demanding love and he was trying to give it. He said he feels guilty about any love but he tried harder to love her than he can afford to admit now. He remembered one time he spoke up. "She said she didn't know where she stood with us children. I answered that we didn't know where we stood with her. She just brushed it off but I should have said, 'How about some of this love for me,' but I couldn't accept any love from her anyhow so what difference would it have made."I asked him how he could be sure since he didn't get a chance to find out. Very emotionally he spoke again of how guilty he felt towards Mrs. Allen and how hard it was to admit he wanted to be loved. He said later he was feeling more and more that people were on his side.

In the following session he emphasized the importance of belonging

to a family. The longer session had meant more belonging and therefore had to be resisted since it was so important.

In the twenty-sixth LSD session Richard continued to fight his battle but with more emphasis on his real mother. His aunt, with whom he was in reality fighting and controlling, he associated with Mrs. Allen. He thought his talking about his mother might be a rejection of Mrs. Allen and that he should be trying to get free of her but his guilt about her keeps him tied. He recalled her daughter had told him that she had said to Mrs. Allen, "Can't you see you are tearing that boy in two? It's better you come home to us, you're a millstone around his neck. He just gets into trouble." And he added, "I'm sorry I won that battle. At least I could hurt her. I couldn't touch my father."

He then went on to how he was never able to get through to his father but recalled a time when he had and that his sister had said that his father had walked around in a daze when Richard ran away from home. I wondered why he had not mentioned this before and he realized he had not thought of it for years and ended up saying, "He's still a phony," thus denying that his father had some feeling for him.

The next day Richard expanded on the theme of his father's invincibility as well as on his boss's and mine. As time went on he eventually became clear about his conviction that his analysis was leading him to a complete break with his family. He was convinced that they will only accept him on the basis of his inferiority and he cannot accept that. There had been an unconscious hope that they would change and he could keep them without compromising but he was becoming certain that this would not happen. He thought he would probably only retain the friendship of one sister without making vast compromises.

An intense fear of castration came up at this time which was not enlarged upon.

This session used up the last of my LSD, but for a number of months I thought I would be able to get more. Eventually, I realized I could not.

Richard visited his family. He didn't have much contact with his father who didn't seem very interested in him. "I realized his interest is only in what affects him." He enjoyed himself on this vacation but was uneasy about seeing the various father surrogates on his return to New York.

As it became clear that there was to be no more LSD in the near future, his resistance grew. He cancelled appointments and was frequently late and uncommunicative. The transference was hostile and demanding, from his father and Louise and frequently a guilty feeling transferred from Mrs. Allen. In either case he was in a bind. We were often able to work this out during an hour but it soon returned.

As for his life outside of analysis, it was much improved. Sexual relationships were enjoyable, his work was progressing and he was taking increasing responsibility and being more independent. It was difficult for him to admit any of this to me.

Finally, about six months after his last LSD session he decided to stop his analysis. He had plans for acquiring LSD on his own and using it.

He felt he had plenty of psychic material to work on and he felt he did not want to give me control over the drug if he got it himself. He had long resented having to have an attendant with him after the LSD sessions. In any case I was not willing to work with bootlegged LSD.

He still felt most of the time that I was judging him as a failure and while he feels this with all persons in authority he does not have to deal with everyone else constantly. At the thought of breaking off, he broke into tears.

He wanted to taper off his leaving but I said I thought that if his decision was firm there was no point in stewing about it by delaying. He would only find it humiliating. I told him that while I did not like the decision I did not feel I could dispute it or judge it and that it was his to make.

He said he felt he had profited from his analysis, including the time before LSD. My own impression was certainly of a much more lively personality both in what I could observe and in what he told me about his social and working relationships.

DISCUSSION

Dr. Savage: Dr. Martin suggested that each of us has to work out his own technique with LSD. This is certainly true. I think that this case, difficult as it is, illustrates many technical problems with this approach. One thing, it shows how LSD can be used in determining the resistance by taking the person two hours a day, and being with the attendant the rest of the time. You get a splitting of transference, so the transference never really gets into the analysis.

Secondly, you will have this problem of a tremendous oral dependence. Both the analyst and the patient become dependent on LSD. This orality, this oral dependency, does not get analyzed. And when the patient is orally frustrated, he responds by leaving the analysis; and his leaving is never analyzed either. But the analysis is terminated somewhat perfunctorily.

And it seems to me that if one is to combine LSD with analysis, one has to analyze somehow the meaning of giving the drug, and what this is doing to the analysis. It seems to me that this was one of the reasons, that if this had been done, I would predict that the patient would have been able to accept the fact that the LSD was cut off. This was a completely realistic thing, and yet he would have been able to misinterpret this as the analyst's malevolence, a repetition of an oral frustration, of one that he had undergone earlier in his life.

Dr. Dahlberg: I would say that on a rational level certainly he has not misinterpreted it that way. I think on an irrational level, he probably did. The termination seemed perfunctory and in a sense it is, in the sense that it was premature; but I don't think really perfunctory. I'm sorry

this case gave you that impression. There was considerable time over which the termination went on.

I think it's a matter of fact—again, I'm sorry this patient did not give this impression—that the transference did get into the analysis. While it certainly was a splitting of the transference, by the use of the attendant, this (as I think many other people have reported in somewhat similar situations) has been found to be at times quite useful, where there will be a doctor and an attendant, two doctors, and so on; or the sort of technique which has been used in various hospitals of having a therapist and administrator, or something similar. Obviously, these things do always cause problems, and I couldn't agree more with Dr. Savage on that, because they do cause problems. I think, though, particularly notable in this case was how something was done for a patient where extensive previous therapy had failed.

Dr. Godfrey: I want to know the number of sessions, and also if the dose remained the same.

Dr. Dahlberg: The dose did not change. The number of sessions was somewhat over twenty.

Dr. Pahnke: Have you had any further contact with the patient since he has broken off?

Dr. Dahlberg: I have not. It seemed to me that that particular point in a one-case series was not of tremendous value.

Dr. Pahnke: I wondered if he got into any trouble taking this bootleg LSD, from the black market, as you indicated in the paper.

Dr. Dahlberg: He hasn't been in any trouble; I know that. And he is doing quite well in his profession.

Dr. Pahnke: I mean, psychological trouble about taking it on his own?

Dr. Dahlberg: That I don't know; but he is functioning adequately, professionally; I know that.

Dr. Blair: I want to ask what the background actually was when the treatment was taking place. This case brings out the point of the value, in drinking cases, of having both sexes in the setting. Wouldn't a patient like this do better with a female analyst?

Dr. Dahlberg: If I understand your question right, there were no females involved in the treatment at all. The attendants at Eaglecrest were all males. However, it is quite possible that he could have been better treated by a female; and it was suggested to him when I first saw him. However, he was extremely resistant to this, and would never have anything much to do with them, as you might know from the very distant sort of relationship that he has had with women. I would think that he would—later on—possibly, say, after he had worked through some of these problems, as he did—be treated much better by a female.

Dr. McCririck: I was wondering if by chance the situation could not be used to persuade the patient to see a woman therapist. My feeling is that only a woman therapist could have resolved his problems—a warm, loving mother whom he could absolutely depend on over a period of time. Can you give me your honest opinion, please?

Dr. Dahlberg: The question is, did I try hard enough? I can't really answer

that. He certainly was encouraged. However, this man had such utter contempt for women, that certainly it was almost an impossibility, in the early part of the work. Later on it is possible that it could have been done. However, obviously, at that time I had an investment in keeping him going.

Dr. Freedman: Dr. Dahlberg, perhaps you'd like to say more about the issue of novelty of linguistics as treatment became apparent.

Dr. Dahlberg: Yes. I gave, some time back, a paper at the Academy of Psychoanalysis in which I reported briefly on a number of cases in the summations on this. The paper was criticized, in a sense, because of my assertions. I had said in there that one of the effects of the drug, among other things, was to increase the richness of the association, or to render the thinking process more free. Now, it was stated that such matters have been tested. There are tools for measuring such matters. And among such tools is the frequency of different words that come up; a selected verbal sample, that is, a number of different words, the so-called type-total ratio, in which you take the total number of words and divide it by the number of different words in the sample. As this increases the difference, you have a major novelty of communication.

Dr. Fremont-Smith: Novelty of verbalization.

Dr. Dahlberg: Novelty of verbalization; exactly right. Because we are certainly not studying all sides of communication, or even, perhaps, very many. But there are certain things which can be done here in large enough samples so that they are statistically meaningful within the very limited range of what they are studying. And we hope to be able to study this with placebos, active placebos and eventually LSD in small doses. It is possible that we will get some sort of a valid, statistical statement about this.

Now, what we're talking about in terms of novelty would be, for instance, an absolute increase in the diversity of the verbal pattern. Secondly, there would be a change in the language, or a simple increased rate of production. We hope to be able to run the tape of some of these hours through a machine which will separate the therapist from the patient and come out on punched cards, measure the break of speech, a pause, pauses between words, measure of intensity on a level of 1 to 5, etc.

Dr. Abramson: Dr. Dahlberg, I wonder if you know Dr. Lennard's work with me at Central Islip and at Cold Spring Harbor? We attempted to do something like that. Have you run into his content analysis using Bales' criteria, on patients under LSD, without LSD, with placebos?

Dr. Dahlberg: It's similar. I read the paper. As a matter of fact, I think I wrote you for reprints of it when we were working up this study. We used some of the ideas in there quite a bit in working up our study. The study will be, I think, quite a bit different from that; but it's based on that sort of work.

Dr. Abramson: I should like to add that Dr. Lennard got these transcriptions blind. He didn't know at which time the patient got LSD or a placebo.

Dr. Dahlherg: That would be my case.

Dr. Abramson: And the content analysis of it was from the transcription, and there was no doubt that there was a difference between the verbalizations with and without LSD. Dr. Lennard found in earlier work with me that the patient's participation in the group process is increased with the use of LSD. Both the frequency of patient interaction and the amount of patient verbal contribution in the group situation are higher than in the placebo sessions. Under LSD the patient's affective references revolving around the self decrease, and affective references toward or centering around other persons increase. Under LSD the patient's non-personal references decrease, and other-oriented references increase. The ratio of expressive to instrumental acts is almost twice as high for the patient during the LSD sessions than during the placebo sessions. On the average the patients exhibit a higher ratio of positive over negative socio-emotional acts during the LSD sessions than during the placebo sessions. In general, there is just as much, if not more, change of behavior under LSD for schizophrenic patients as for "normal" subjects.

A Case of Change and Partial Regression Following One LSD 25 Treatment

Jack L. Ward, M.D.*

Alan's therapy consisted of approximately thirty-four psychotherapeutic interviews and one 150 mcg LSD session in the seven months prior to his parole from the New Jersey Reformatory Bordentown and five scattered interviews during his first six months of parole. (I am indebted to my colleagues, James Ulrich M.A. and Ira Mintz Ph.D., who did most of the work with Alan.) His case is presented because of his unusual capacity to show change, in his figure drawings, and in his behavior, because of the dramatic nature of his LSD session and the changes connected with it, and because of the evidences of partial relapse following the treatment.

For those who are opposed to any particular treatment, it is often difficult to substantiate that improvement has occurred because of the particular treatment or, indeed, even that change has occurred during or following the treatment. Exceptions to the difficulty of showing change are problems such as alcoholism—i.e. the patient stops drinking or he does not. However, with the greater number of psychiatric patients, we have no such concrete yardstick.

Perhaps goaded on by a buried anti-scientific bent of which I am unaware, I have always found it curious that we have no objection to ourselves or our colleagues accepting for expensive therapy an apparently adequately functioning individual purely on his word that he feels bad or unhappy because of anxiety, depression, phobias, etc. and then, at the end of therapy, refuse to accept his word when he "claims" to feel good or happy, because he no longer feels anxious, depressed, phobic, etc. (I refer to the end of therapy and not to the defensive "flight into health" that every therapist encounters when his patient wishes to terminate prematurely his course of EST, psychotherapy, drug therapy or any other therapeutic endeavor.)

The skepticism is apt to occur more frequently when one reviews the results of a colleague whose theories and methods differ substantially

* Staff Psychiatrist, New Jersey Reformatory at Bordentown; Mercer Hospital, Trenton.

from one's own—our patients show real improvement, of course! The possibility of a therapist and patient sharing a wish-fulfilling delusion of improvement is present, but I wonder if we are not overly concerned with it. I think that, in Alan's case, we can easily see a pattern of change greatly accelerated by the LSD session and followed by regressive changes.

Alan is the third oldest of four children. His older sister and younger brother never had difficulty with the law. His older brother Jim, however, had been involved in extensive delinquency and had spent a term in the reformatory. Alan's father separated from his mother when Alan was three years old and had no further contact with the family. Alan's mother had a number of relationships with common-law husbands until she married her present husband when Alan was fourteen years old. On the surface, Alan's early history was unremarkable. He was an average student in school and was considered normal except for a problem with bed-wetting. In the tenth grade, when he was sixteen years old, he suffered a ruptured appendix and quit school because he felt he could not make up the work he had missed because of his illness.

At the age of seventeen, Alan married a sixteen-year-old girl and went to live with his wife in the home of her parents. Two daughters were born of the marriage. The marriage lasted three years with many separations, usually occasioned by Alan's insistence on being with other women. Alan moved back to his family's home when final separation occurred eight months before his incarceration. He had been steadily employed as a mechanic or machinist until he suffered a compound fracture of the right foot six months before he was apprehended for his crime. Once home Alan became involved with an older man and with his brother Jim who was on parole from the X Reformatory. The three were arrested and convicted of armed robbery in May 1960.

Alan was admitted to the X Reformatory with a three to five year sentence at the age of twenty-one years, along with his brother Jim who had received a lesser sentence because he had participated in the crime only to the extent of driving the car. Alan was classified as a Passive Aggressive Personality with dull normal intelligence. He rationalized his crime as the result of economic need; he stated that because of his foot injury, he had been unable to find a job. On admission he was not particularly interested in psychotherapy. However, four months later his attitude changed and he requested therapy. He was also able to admit that, in addition to the known offense for which he was incarcerated, he had engaged in seven separate acts of breaking and entering and four armed robberies with the same accomplices. He entered group therapy but dropped out after seven months because he was unable to discuss his problems in group and felt that he was getting nothing out of attending. He made no attempt to avail himself of therapy until nine months later when he again requested therapy and was started in individual therapy with Mr. Ulrich in April 1962, at which time he completed the drawings of that date.

Mr. Ulrich saw him once weekly. Alan was very active in his sessions. He expressed much anxiety and guilt and progressed rapidly. He ex-

amined his hostility toward his brother Jim who he felt was his mother's favorite. He discussed his yearning for his real father, his finding his father and his disillusionment when his father cheated him out of money instead of treating him "like a son." Finally he was able to talk about his guilt concerning his wife and his mother-in-law. He had been having intercourse with his mother-in-law starting shortly after he was married. His relationship with the mother-in-law continued after his separation from his wife, and now the mother-in-law visited him loyally at the reformatory. Alan ventilated a tremendous amount of feeling and was able to see how his feelings had led him into various forms of self-destructive action. The drawings of July 20, 1962 were done during this period.

Because of the evident progress and the short time before parole, Mr. Ulrich's supervisors, Drs. Mintz and Ward, agreed to introduce an LSD session. Three days prior to the session, Alan completed the drawings dated September 10, 1962. The dose level of 150 mcg was a compromise between J.W.'s opinion that the benefit from LSD comes mainly from the intrapersonal experience itself and I.M.'s and J.U.'s opinion that the main benefit would come from the development of insight in a psychoanalytically oriented session. As a consequence, we had a hybrid LSD session. The transcript of the session does not indicate the periods of time when Alan was "off by himself" during lengthy pauses when he appeared to be attending to things going on within himself rather than dealing with the three of us. The transcript does indicate rather dramatic insights.

Among the various impressive materials that emerged during the LSD session were the following:

Alan recalled his adolescent sexual play with his brother Jim with much guilt and acutely experienced his hostility toward Jim and his feelings of abandonment occasioned by his mother's preference for Jim. He agonized over his mother's relationships with successive "husbands." He tried to approach "one thing" repeatedly, only to lose his direction, doubt his sanity, feel nauseated and finally to vomit violently without being able to conceptualize, or at least to verbalize, that "one thing." The vomiting was abruptly terminated by the suggestion that he think of the happiest day of his life. He promptly regressed in verbal content, tone of voice and body position to some time in infancy when mom treated him.... "like a baby should be treated?"

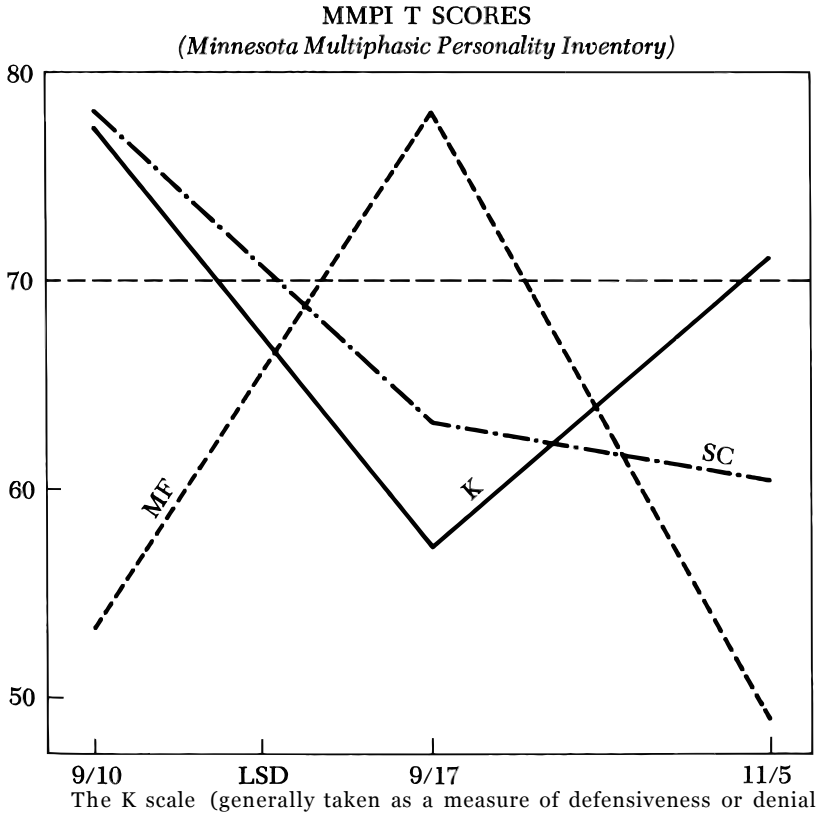
Alan: "Yeah!"

Gradually Alan was able to consider the idea that he was acting out his wish for his mother by having intercourse with his mother-in-law. He revealed peeping on his mother when he was seventeen. He changed his statement from the idea that his mother wanted him sexually to the statement that he wanted his mother, but that she did not want him. Toward the end of the session, he described the best of all possible worlds in which he had exclusive possession of mother—"just me and mom." In the days immediately following the LSD session, Alan felt elated and free. He executed the drawings dated September 17, 1962, four days after the session. They were markedly improved, indicating a much more integrated

personality, compared to those done seven days previously. The fact that Alan's drawing of a man bears a striking resemblance to himself, while all his others do not, might indicate that Alan did have a sense of "experiencing himself" in the immediate post-LSD period.

During the next two months leading to parole, Alan worked enthusiastically in therapy, fitting together pieces from his LSD session and following associations to the material. At parole, he was eager to prove himself "on the outside." His drawings at this time showed a shift to a more defensive, hardened and hostile pattern, but they continued to indicate improvement over the pre-LSD state. It appeared as though Alan were girding up to meet the onslaught of a hostile world and the disturbing family situation.

Along with the drawings, the MMPI (Minnesota Multiphasic Personality Inventory) was also administered on September 10 and 17 and November 5, 1962. Changes in the K, MF and SC scales are of interest.



The K scale (generally taken as a measure of defensiveness or denial of abnormal traits) T score originally was 77. After LSD on September 17, K dropped twenty points into the normal range at 57; on November 5 the K scale score increased 15 points to 72. The changes in the K scale are consistent with the impression from the drawings of the same date which

were interpreted as showing a greater acceptance of self immediately after LSD followed by an upsurge of defenses just prior to parole.

The MF scale (generally taken as a measure of feminine traits or homosexual tendencies in the male) has a sharp inverse relationship to the K scale. Initially in the normal range with a T score of 53, the MF increases 25 points to 78 on September 17; on November 5 the MF score falls 29 points to 49. Apparently immediately after the LSD Alan was able to "let down his defenses" enough to allow himself to feel his feminine, artistic or creative components. Again, just prior to parole, defenses against "softness" possibly had to be erected to be able to take on the problems of the outside world. The stress of life in the last month before parole, with the danger of losing the parole if one is involved in any infraction of the rules as well as doubts whether one really can make it on the outside, is familiar to anyone who has worked in correctional settings. In the language of the inmates this is "hard time." Irritability, anxiety, insomnia, depression, withdrawal, etc. are common, and other inmates accept the change in their soon-to-be-paroled friends with a shrug of the shoulders and a simple explanation—"He's short."

Changes in the SC (schizophrenia) scale are perhaps the most positive of the three scales. Originally SC T score was 78 (2.8 above the mean). On September 17 SC dropped 15 points to 63; on November 5 the SC dropped another 2 points to 61. One can infer that, on November 5, Alan did not utilize the schizophrenic types of defenses against or adaptation to stress which he employed prior to his LSD session. The other scales of the MMPI showed little change on the three separate testing dates.

After parole Alan returned home to live. Things had not changed much. His brother had been paroled some months earlier and had settled into his accustomed place in the family. Jim had made a half-hearted attempt to work sporadically; now he spent his time at unspecified pursuits when he wasn't lying around at home under mother's protection and having the effect of a foreign body in his mother's relationship with her husband. Alan's wife had divorced him while he was still in the reformatory, remarried and moved away. Mother-in-law, freed from family encumbrances which had prevented her from full expression of her affection, waited with open arms.

Alan was able to size up the situation, to recognize the pressures and to remain uninvolved. He had some friendly visits with his mother-in-law, but did not have intercourse with her. He found that he had no compelling sexual drive for her. However, he did have warm feelings for her. After all, she had remained faithful to him throughout his incarceration with her alternate weekend visits, and he should be kind to her. He found a job and a girl. He was able to return to the Reformatory occasionally to visit Mr. Ulrich during the next six months. His drawings, executed five months after parole (4/17/63) were not as good as those immediately after LSD but were "softer" and less defensive and hostile than those just prior to parole. Curiously enough, the girl whom Alan took up with and planned to marry was a young divorcee with a personality similar to his former

wife's and with two daughters of the approximate age of Alan's daughters of his first marriage. At this point, Mr. Ulrich left the Reformatory and direct contact with Alan was lost.

I followed Alan via parole reports for the next sixteen months. He married, held his job and stayed out of difficulty with the law. (By contrast, his brother Jim was recommitted to the Reformatory during this period of time). However, Alan's parole officer noted that he was becoming tense and referred him for evaluation in August 1964. Alan was anxious. He expressed some bitterness that some of his friends who had not been in jail had good jobs and that he was years behind them. He also worried about his marriage and himself. His wife was loving, tolerant, understanding and a good partner in bed. Yet Alan found himself compelled to go out to bars to drink beer and to become sexually involved with other women. He did not drink to the point of drunkenness, nor did he experience any conscious impulses towards criminal activity. He felt guilty about his actions and puzzled by them. His drawings (8/19/64) showed further regression but they remained much superior to those which he had done in the first phases of his therapy. In our second interview, Alan reported that the prescribed Librium had brought some relief but that he still was worried about his compulsions. He did not appear for further interviews.

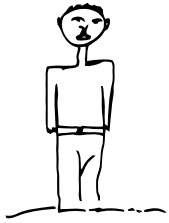
SUMMARY

Presented is one man's response to a course of therapy consisting of 6 months of one weekly individual therapy prior to one LSD 25 150 mcg session and followed by two months once weekly individual therapy in a Reformatory setting plus five scattered interviews in the first six months of parole. Serial drawings starting 21 months before initiation of therapy and ending 28 months after the initiation of therapy are presented as one of the indices of change. The verbal content of the LSD session is presented for consideration as a possible source of the change. While there is ample evidence of regression from the sharply improved immediate post-LSD state, there is also evidence of sustained improvement in the 23 month post-LSD follow-up period both in the patient's drawings and in the positive adjustments he was able to make in his life. It is postulated that the amount of improvement evidenced by this man during and after his very limited therapy is unusual particularly when one realizes that the improvement was attained in the relatively protected environment of the Reformatory and partially sustained in the harsh realities of the ex-convict world which occasions 50 percent to 75 percent recidivism within the first year of parole.

Addendum: Alan was discharged from parole at the end of his sentence in January 1965. No arrests were noted on his parole record. At the time of parole termination he was employed and living with his grandparents. In 1964 he was separated from his second wife.

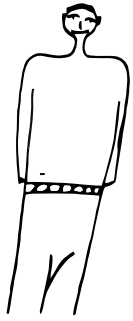
1

Admission
July, 1960.



2

4/11/62
Psychotherapy
started.



3

7/20/62
4 months
after
psycho-
therapy.

4

9/10/62
3 days prior to LSD.

5

9/17/62
4 days after LSD.

6

11/5/62
2 months
after LSD.

7

4/17/63
7 months after LSD.

8

8/19/64
23 months after LSD.

MULTIPLE-THERAPIST SESSION: LSD 25 (150 MCG)

Verbatim Recording

Group Therapists:
J. Ward, M.D. (W) *Psychiatrist*
I. Mintz, PH.D. (M) *Psychologist*
J. Ulrich, M.A. (U) *Psychologist*

SUBJECT: Alan

8:45 A.M. Drug administered.

W: Why don't you start and I'll chime in?
U: Alan, your mother came up this weekend. What were you planning to tell her?
Alan: I wanted to talk mostly to her about Jim.
U: Why did you want to talk to her about Jim?
Alan: I was going to find out what her feelings were—the difference between Jim and myself.
U: What do you think some of the differences are between Jim and yourself?
Alan: I always thought he was the favorite.
U: This has been bothering you for a long time. How does Jim relate to your mother?
Alan: Seems the more she does for him the more he hurts her.
U: And you do just the opposite?
Alan: Yes, and Jim is always in trouble.
W: How does this hurt her?
Alan: Well, she was always trying to make him do what is right. He hurt her.

9:05 A.M.

W: Whether you do well or don't do well does not affect her?
Alan: That's the way I feel. Her main thing in life was to make us mind, turn out right. Just seems I failed her. (long pause) Now I'm in X———.
U: Yet before your got to X———, and Jim got to X———, you said your mother was upset and nervous.
Alan: Yes, she's been like this as far as I can remember.
U: Yet Jim is her favorite, and he has fouled up more than you have.
W: Have you ever wondered why, Alan?
Alan: Maybe because Jim is the first. Maybe that is why he is the favorite.
W: He had first crack at her before you were around?
U: Didn't you also feel this because Jim looked more like your father than you do?
Alan: Yes, because my mother said she did not like my father. I think maybe she did.
U: Do you think this is because you would not want to accept it the other way; that is, she didn't love him?
Alan: My grandmother told me she really did not love him.

M: Alan, you talk about things that do not have to do with you personally, your brother looking like your father and being first born. I was wondering if you wanted to talk about things you say or things you do that may be responsible for this feeling you have that your mother is closer to your brother. Things that have to do with you as a person.

9: 27 A.M.

Alan: You mean things I say toward my mother or to my mother? I don't see where that would have much to do with it. I mean I never said anything out of the way to her.

M: Do you think this may have something to do with it, the fact that you have not said anything out of the way?

Alan: I would say I would keep hurting her if I was like him.

W: Usually when somebody is doing you in all the time and makes you angry at them, you tell them to go away.

Alan: She was trying her hardest to straighten him out. I don't know how to explain this. She did go all the way out of her way and did take a lot of shit off him. No matter what he did to her he would always be her favorite and she would never give up trying.

U: She never really said this in so many words; this is what you feel. You feel that he gave her a lot of shit?

Alan: Yes, I never gave her a lot of shit.

U: What kind of person is your mother?

Alan: She is quiet and good. My mom was never too hard on us even though we would do some things wrong, it would have to be extraordinary for her to really hurt us.

9:35 A.M.

U: When you were real young and you wet the bed, she never came to your defense?

Alan: No, just a kiss goodnight and that was it.

M: I get the impression from what you said that you lived a quiet life and your mother was a quiet type of person and there was no togetherness between you? Is this what you are saying?

Alan: Yeah, that's the way it was but I wanted to be close to her, close to her.

M: Your brother was close to her and this is what you wanted. Even though he was drinking and getting into trouble, she was still closer to him no matter how much shit he gave her.

Alan: It seemed he was doing this just to get more recognition from her.

M: Did he ever tell you that?

Alan: It's just the way I am thinking of it right now. It seems like he was bad most of the years.

U: Did you feel the same way about your step-father?

Alan: Yes, I couldn't get close to him.

U: Alan, how old were you when your parents got married?

Alan: I was very young, I can't even remember.

U: How old; two, three, seven, eight years?

Alan: No, I was younger than that. She's remarried a couple of times since my real father.

U: How does your stepfather fit into the picture, the one you had around twelve years old? How did you feel toward him?

Alan: Well, I was living with my grandparents. No, when I was eleven or twelve I was living with my mother then. That was the one who used to wake me up in the morning a peculiar way. I used to wet the bed and I would be awakened in the morning by a smack on the rear end. It was something I couldn't help. He felt that I was too lazy to get out of bed.

W: How did you feel when you were awakened like that?

Alan: I created some hate for him, I guess. I didn't like it.

U: You mentioned once before that you would get even if somebody hurt you, but you never mentioned how you would do this.

Alan: Clue me in, I can't seem to remember.

U: One time in one of your therapy sessions you said if somebody hurt you, you would get even some way. I think we were talking about your brother, Roy and yourself. You think maybe Roy squealed on the three of you?

Alan: Yeah, well he did!

U: Maybe it was in connection with the cops hitting you and knocking you off the chair.

Alan: Yeah!

U: Here you have another situation, you dislike your step-father. You said you built up some hate. I wonder what you did with it?

Alan: Well, I didn't like it when they were punching us around and before we went in there Roy said no matter what they ask us we won't tell them that we did it. So I said all right. They just had the two of us, Roy and myself, and they questioned me and asked if I was at a certain place. I said no. He slapped me across the face and I remember I got real hostile then and I said to myself, you won't get anything out of me now. So they kept asking me and I wouldn't tell them nothing. They kept asking Roy in another room, so he finally told them.

U: Would you say you got hostile inwardly and said to yourself I won't tell them anything now? Is this how you reacted to your step-father? How did you react when he slapped you on the behind to wake you up?

Alan: I felt like knocking him down when he slapped me on the rear end to wake me up.

U: But you didn't?

Alan: No! Just cried!

U: What did your mother do about the situation?

Alan: He did not like her butting in. He said he was going to make us kids mind. It appeared to him that we never did mind.

W: Maybe she didn't want to butt in.

Alan: I think she did, but I think it was the idea of him trying to make us mind, and she wanted that more than she was able to butt in.

U: Yet, Jim does not mind, and she feels closer to Jim, and Jim feels closer to her.

Alan: Jim, uh! (said in a disgusted tone of voice)

U: What about it? (long pause)

W: Want coffee, Alan?

Alan: Yes.

W: With sugar and cream?

Alan: Yes.

W: One sugar or two?
Alan: Two. It's really starting to work now!
W: Is it?
Alan: Uh huh!
W: What's going on?
Alan: Well, I see the green is changing. It's like spots coming in from the wall. Changing. I feel heavy.
U: What about Jim? We mentioned Jim a few minutes ago.

10:45 A. M.

Alan: It seems like Jim is the biggest part of my whole life.
U: Jim is the biggest part of your whole life?
Alan: Yeah!
W: Can you tell us what you mean?
Alan: I am trying to think.
W: Well, as you think of Jim, what sort of feeling do you have? It is important to let yourself feel that way.
Alan: It is such a mixture of feelings! (long pause)
W: What do you think of first of Jim?
Alan: (groan)
W: You'll have some effects from the LSD.
Alan: Everything is distorted-like. See, I want to talk about something.
W: You will be able to.
Alan: Yes, but everything goes and changes so fast I may not get it out. Well, (sigh, sigh) (5-minute lapse)
M: Alan, do you have something that you just cannot talk about?
Alan: No, everything seems to be changing so rapidly!
M: Things that you see or things that you're thinking?
Alan: Things I see mostly.
U: What about your feelings for Jim?
Alan: Sometimes they're good, sometimes they're bad.
U: What's bad about them?
Alan: What he tried to do to me!
U: What did he try to do to you?
Alan: Now that I look at it he tried to ruin my whole life. In one minute!
U: Just in one minute? What happened then?
Alan: It was when we were young. I guess twelve or thirteen years old. We were in bed together and he wanted to— (silence) This is hard Mr. Ulrich!
U: It's all right.
M: Alan, you don't have to talk to us, you can just talk your thoughts as if we were not here.
Alan: No! I want Mr. Ulrich to know!
M: It may be easier if you don't talk to us and just talk your thoughts.
Alan: At the time I couldn't understand him. I didn't know what he was talking about. It was as though he was out with freaks or something because he wanted to *screw* me in plain words, and I said, No! Then he wanted me to do it to him. So I started to, and I hated him.
U: You felt that this was when he was trying to ruin your whole life?
Alan: Yes! Why did he have to do that? Why was that so important?
U: What did it do to you?
Alan: It seems as though it's half ruined my life, (sigh) (pause)
W: How has it half ruined your life? How has it done that?
Alan: Can't hear you.

W: How has it half ruined your life?
Alan: There's something right there. It's what always gives me my nervousness. (pause) Can't talk sometimes. All of a sudden I just feel like— (pause) Boy!
W: All of a sudden you just feel like—?
Alan: Huh? It seems like I always want to talk to somebody but when it comes right down to it I can't. But it looks— (cough)
U: But you can now!
Alan: I know I can talk, (pause) Boy, what a distortion!
W: What is that?
Alan: Everything.
M: Why don't you close your eyes, Alan? It will be easier for you to think.
Alan: I feel sick to my stomach then. I do now. I'm so dry!
W: I guess that one minute distorted a lot in your life too. (pause)
Alan: I'm so dry!
U: Want some more coffee, Alan?
Alan: No, maybe water. See, I have this lump in my throat I'm always getting all the time. I want to get rid of it. It stops me from talking.
W: Do you get that lump when you talk to a woman?
Alan: No.
W: You don't get the lump when you talk to a woman?
Alan: When I try to talk in a group or (pause) either in school or like when I was working for Mr. G (Job Supervisor) I wanted to talk out, but something made it seem like everybody was looking at me and I couldn't get it out. I just had to. I just started choking, it seemed like.
M: Does this happen more often with men, Alan?
Alan: You mean the choking?
M: Yes, this lump. Like with Mr. B (Assistant Superintendent) or like now.
Alan: No. It just seemed like when I wanted to get something out, like if I wanted to talk even if it was not about anything important, it seemed like somebody was always looking at me, and—it—.
U: What were people thinking when they were looking at you?
Alan: I don't know what they were thinking. I know it is silly when they look at me and find out. (pause) Even now I'm having trouble talking. I don't know what it is! I wish I knew! I am trying to find out now!
W: You were talking about your brother, about his approaching you for this homosexual business, saying that he tried to ruin your life in one minute, that he succeeded in half ruining it. Then you immediately started talking about the lump in your throat.
Alan: Oh! You think there is a connection there, Mr. Ulrich?
U: Do you think there is a connection?
Alan: I think that it has something to do with it.
U: What do you think the connection is?
Alan: Well, see— I mean there is no— (pause) I remember, I remember him saying, "Come on, Alan," and I said "No! No! No! No!"
U: You said, "No!" and then what happened?
Alan: He said,— "Well," he said,—uh. He said, "You do it to me." I started to.
U: You started to?

Alan: Yes, I started to do it.
M: Do what, Alan? Blow him, you mean?
Alan: No, he wanted, he wanted me to, he wanted me to *fuck* him in plain words, (mumble)
W: Did you have an erection? Did you have a hard-on?
Alan: Yes.
M: Do you remember at any time, Alan, having the lump in your throat at that time during any of the sex play with your brother?
Alan: No, no. (pause)
W: Tell us a bit about it. Let's go back.
Alan: What's that there?
W: Huh?
Alan: What's that?
W: About this time with your brother. We will let you think about it.
Alan: That dirty bastard!
W: How did you feel?
Alan: I felt like punching him.
W: Why? (long pause) Did you want to fuck him?
Alan: Yeah!
W: Why did you stop?
Alan: Why did I stop? Huh? (pause)
M: Why *did* you stop, Alan?
Alan: Yes, I remember doing it. I never finished.
W: Did you get in?
Alan: No.
W: But you wanted to? (pause)
Alan: Yes!
W: So, there you are. You're trying to get in your brother, now how do you feel?
Alan: The way you put it, it sounds so awful.
M: Did you think so at that time, Alan?
Alan: Huh?
M: Did you think it was so awful at that time when it was happening?
Alan: Mmm—yes.
U: You were pretty young, weren't you?
Alan: Let me see (pause) I just—(long pause)
W: We're going back again. There you are in bed with your brother and you are trying to put your penis in his anus.
Alan: True.
W: And you're pushing and you can't get in.
U: Why did it all stop? (long pause)
Alan: Look—(sigh)
M: We are asking you these questions to try and help you to talk about it because we realize that it is hard for you. If you can talk about it, it will be helpful, but we will understand it is hard for you.
Alan: It seems like everything is just changing, (sigh) Colors and (pause) Oh!
W: That day you wanted to fuck him.
Alan: What is it?
W: That day you wanted to fuck him, your brother.
Alan: Yes, I remember that.
W: What happened to the rest of it?
Alan: Can't focus.
W: Who else did you want to fuck?

Alan: Who else? (pause) Boy, the changes.
W: Things do change, but we are also talking about something that is very uncomfortable for you. This will tend to shift your attention. This is difficult for you to talk about.
Alan: Yes, I want to talk about him.
W: At any time after that, did you want to go ahead and do this with another boy?
Alan: It seems everything is distorting.
W: Does it distort more when I ask you these kinds of direct questions?
M: Still feel sick, Alan?
Alan: Yes.
U: It will go away.
W: Alan, are you afraid you're a homo?
Alan: No.
W: Because you have these tendencies?
Alan: No.
W: Why? (pause) Why did you want to hit your brother?
Alan: Huh? (airplane sound for 2½ minutes)
U: What do you feel?
Alan: Ringing in my ears.
W: What scares you the most?
Alan: Pardon?
W: What scares you the most, frightens you the most?
Alan: What frightens me the most?
W: Uh huh?
Alan: Afraid I might lose my mind.
U: What would cause you to lose your mind?
Alan: This.
W: This? You mean the drug?
Alan: Yes.
W: No!
Alan: No?
W: No! The drug will help bring up stuff you find pretty hard to talk about or maybe haven't thought of, or even realized about yourself. The drug will not make you lose your mind.
Alan: It makes me feel awful.
W: Maybe you have things to feel awful about.
Alan: Everything changes.
M: Do you want to take your shoes off, Alan?
Alan: No, no sir. (long pause)
M: Alan, we will understand anything that you say. Anything you say is O. K.
Alan: I am trying to. Am I supposed to be acting like this?
W: It is hard to concentrate. Because our thought gets so far away from us and suddenly we are thinking about something else. It is this sort of thing.
Alan: Yes.
W: We will come back to these things. The most important thing is your feelings, (pause) How many times was your mother married?
Alan: Too many!
W: How many is that?
Alan: Four. Actually she did not get married all those times. She lived common law.
W: About how many did she marry?

Alan: Five, six, four, I guess. Too many! Too many!
U: How does this make you feel? (pause)
Alan: Are you sure it is supposed to be like this? This is bad? What did you ask me?
U: How does this make you feel that your mother lived with so many men?
Alan: How does it make me feel?
U: Uh huh!
Alan: I wish I could concentrate on one thing so I could talk to you. (pause) (truck noise) Now—(burp) Excuse me. Boy, everything is going so fast!
W: She married too many men, too many different men. She was sleeping with too many different men.
Alan: Yes!
M: How did it make you feel? (pause)
Alan: Oh! (sigh)
W: She used to sleep with many different men. Did one of those she was sleeping with used to whack you on the ass?
Alan: Yeah! That was Joe. I hated him! Boy, did I hate him!
W: Why did he hit you?
Alan: He shouldn't hit! Shouldn't hit! (pause) Yeah!
M: How did you want him to treat you?
Alan: Everything drifts. I just can't seem to focus on anything.
W: Joe shouldn't hit you!
Alan: What?
W: Joe shouldn't hit you! You're a little boy (pause). You wet your bed in your sleep, he comes in and hits you! You said, "I hate him!"
Alan: Yeah!
U: Your mother let Joe hit you?
Alan: She did not want to, but he was trying to make us mind.
W: How do you feel?
Alan: Crazy.
W: What's bothering you? (pause) Strong feelings?
Alan: Feelings? I feel like I am going out of my mind!
W: You are not going out of your mind. You have strong feelings.
Alan: Yes.
U: What are they? Can you describe them?
Alan: I just— (pause, heavy breathing)
W: What are they? Are these the feelings you keep on telling yourself you should not have?
Alan: It's so much now! (pause) This is crazy! (pause) Dr. Ward?
W: This isn't crazy; it is just you letting yourself feel so much more than you usually do, and everything is going too fast.
Alan: Yes, but I can see the three of you sitting here and then everything is distorted. Oh! This wants to change—no meaning.
U: Do you think your real father was like me?
Alan: Do I think my real father was like you?
U: Uh huh!
Alan: No.
M: No? Are you like Joe?
Alan: No.
M: Are you different from Joe?

U: Are you the same as Joe?
Alan: These changes!
U: How do we look to you, our faces?
Alan: O.K. now!
U: Before?
Alan: Are you supposed to go through all this?
M: Anything you go through, Alan, is all right.
Alan: Anything?
M: Anything!
Alan: (sigh, sigh) I can't seem to think straight. Seems like—(wanders off).
W: This happens, and it is all right.
Alan: It's ridiculous! You sitting here, right? (groan) (pause)
M: What do you feel is ridiculous, Alan?
Alan: All this. Now! (pause)
M: The changing, you mean, is ridiculous?
Alan: Yes.
M: But this is what happens. Don't be afraid of it.
Alan: Don't be afraid of it?
M: No.
Alan: (groans, sighs, moans) (pause)
M: This is what Dr. Ward experienced; this is what I experienced, and this is what you experience. You don't have to be afraid of it.
Alan: (pause, breathing heavily) (pause) No! (pause)
U: What are you feeling?
Alan: I am looking for something, looking for something, and I can't find it.
U: What are you looking for?
Alan: I don't know.
M: Are you looking for a person?
Alan: No.
M: A thing?
Alan: You go through all these changes?
U: Yes, there is nothing wrong. You once went and looked for your father, didn't you?
Alan: Boy, I wish I could be some help to you, Mr. Ulrich.
U: Don't worry about me.
Alan: I don't want this to be a complete failure.
M: It isn't, Alan.
W: You will listen back to the whole thing on tape.
Alan: Yes, but now!
M: We are here to help you. Alan; you're not here to help us.
Alan: Oh! (sighs, moans, etc.) We are here to help you, Alan, you're not here to help us. That's it! That's it! (subject asking himself orientation questions out loud). I am trying to help you.
W: Why did your father leave you? He did, you know.
Alan: I don't know.
W: He did. He left you.
Alan: I know.
W: Why? What would it have been like if he stayed?
Alan: What?
W: What would it have been like if your father stayed?

Alan: If he stayed? (burps, pause) Excuse me. (Sighs, moans, heavy breathing) Huh? Oh!
W: Your father *left* you!
Alan: Yes.
W: Why did he leave? (pause) Did you ever ask yourself that?
Alan: Why did he leave?
W: Why did he leave, Alan?
Alan: I am trying to talk about these things but—(pause).
W: You can talk.
Alan: Yeah, but that just goes fast. Now—(pause) It's normal, right?
W: Uh huh!
Alan: To feel like this?
W: You are doing an awful lot of work, (airplane sound).
Alan: Oh? (coughs) I am so dry!
U: You got the lump in your throat? You want some more water?
Alan: No! I'm not going insane, am I?
All 3: No.
U: Does it bother you now, all these feelings?
Alan: (heavy breathing, 3 minutes lapsed) Now? I am sitting here, right?
U: Uh huh!
Alan: And you want the purpose of it, right?
U: Right.
Alan: Well—you go through so many of these changes?
M: Yes.
Alan: Oh...
M: You're a grown man. You can go through this just as we have gone through it.
Alan: Yes, I know.
M: You don't have to be afraid.
Alan: Yes, I know, but I feel sick to my stomach.
W: Do you feel like a little boy at times?
Alan: You don't understand.
W: Maybe you can help us? (airplane)
Alan: You must have given me the full dose, didn't you?
W: True.
Alan: Why can't I talk about this then? Why is everything so distorted?
W: It's part of the drug.
Alan: You went through this, Dr. Mintz?
M: Yes.
Alan: All of this?
M: Yes, I saw and felt just like you are seeing and feeling, and I asked the same questions you are asking.
Alan: It's crazy.
M: It's different.
Alan: (sighs, sighs, heavy breathing) Oh!
W: Did you ever hear your mother making love to these men or see her?
Alan: Did I ever— What?
W: Did you ever hear your mother making love to these men?
Alan: Yes.
W: How did you feel then?

Alan: (pause) (groaning) Oh! Oh!
M: What did you think of doing, Alan, when you saw your mother making love to these other men?
Alan: Everything is so fast. It's like I am going out of my mind!
W: You will be all right.
Alan: Oh, oh.
U: How did you feel then?
W: (Aside to U & M) Things are going very fast. This is about the peak.
Alan: (Moans)—I can understand what you're saying, man. I can understand what you are saying.
W: I was not asking you, I was talking to them. I think if I talk to them about something, and I'm not questioning you and trying to get you to experience things, you then can understand what we're trying to do, and what we are trying to do is to get out all these feelings and that's hard to do.
Alan: Excuse me.
W: That's all right.
Alan: Oh! (pause) Oh! Look! I know. Oh! Why all these changes?
U: You know?
Alan: I know we are trying to talk about one thing here.
M: What's that one thing?
Alan: Everything is changing here.
U: We are trying to talk about one thing.
Alan: Am I supposed to get—? (long pause) What are you talking about?
U: One thing.
Alan: What?
M: You have not told us yet.
Alan: What?
U: One thing.
Alan: What?
W: You said we're trying to talk about one thing.
Alan: I am still looking for it. Oh! Oh!
W: How will you feel when you find it?
Alan: Everything is so crazy! Right?
W: Drug reaction as it should be.
Alan: Well—(gagging) Ohhh! (long pause)
M: Where is this thing you're looking for?
Alan: Wait. Huh?
M: Where is this thing you're looking for?
Alan: Everything seems so crazy now. Why can't I think?
U: You will.
Alan: Oh! I'm all right, ain't I?
U: You're all right, (pause)
Alan: Oh, this is crazy!
U: We are looking for one thing. What are we looking for?
Alan: Is all this right?
U: Uh huh!
Alan: Oh, there's so many changes, Mr. Ulrich!
U: That is the way it is, there is nothing wrong with it.
Alan: Right now I want a cigarette.

U: O.K. Can you get it all right?
Alan: Oh! Oh! You go through all these changes, right? I am not telling you nothing, am I?
W: You have given us things from time to time.
Alan: Huh?
W: And there are things you haven't told us because things go too fast.
Alan: Boy, this is crazy!
U: What do you want to tell us?
Alan: Feels like we're going through a time stage, a time zone, (airplanes)
W: Things going so fast?
Alan: Yes. Is it supposed to be this bad? The changes!
M: Why do you say bad?
Alan: These changes!
U: What's bad about it? Is it this one thing that's bad?
Alan: Oh, huh?
U: Is it this one thing that's bad? One thing that is bothering you?
Alan: Oh!
M: What do you want to tell us, Alan?
Alan: Now. (burp) (2 minute lapse) Excuse me. See! (groan)
U: What were you going to tell us.
Alan: See, Mr. Ulrich—
U: You can tell us.
Alan: I know but (groan) I can understand what you mean.
W: Things will slow down so you can get to talk about them.
Alan: Well, slow them down! Can you slow them down?
W: Let the things go on that are going on. Don't worry because you're having so many experiences. This is good.
Alan: Oh! Oh! Am I doing all right?
U: Sure. You're doing fine. This is normal. Don't worry about it.
W: Close your eyes for a little while, and see what you see.
Alan: Why do you want me to close my eyes?
W: To see what you can see.
Alan: What! (irritated)
W: To see what you can see.
Alan: I don't mean to get nasty.
W: Do you get nasty when you are asked to do something other than what you want to do? You should.
Alan: Oh! Why do I feel so sick? Why do I feel so sick?
M: Have you felt sick like this before?
Alan: No, never!
U: Never?
W: How do you feel?
Alan: I feel, I don't know.
W: Can you describe it?
Alan: Yes, (pause) that saw! (sound of circular saw from furniture shop)
W: Yes, that is kind of annoying.
M: That is exactly the way I felt, Alan.
W: Is that the way you feel, like that saw?
Alan: Is that the way you feel? (laughs) What a time to kid around like that. Wow!
M: Are you mad now, Alan?

Alan: Huh?
M: Are you mad now?
Alan: Am I mad? No.
U: Not mad?
Alan: Wait a minute! Give me something to drink. Not coffee, water, try water.
U: There is water.
W: Shall I go out and see if I can scare up some juice for you?
Alan: No. (pause)
W: Do you remember what is was like when Joe woke you up with a good crack on the ass?
Alan: Is all this normal?
W: Yeah. Do you remember what it felt like when he woke you up with a whack on the ass?
Alan: Who, Joe?
W: Yeah. How did you feel? Pretty helpless?
Alan: Yeah. You're saying I am a grown man now, right?
U: Um hmm.
M: Do you feel like a grown man, now?
Alan: Yeah. What I am trying to say is —.
U: What you're trying to say is—?
Alan: I feel sick.
W: Sometimes I don't feel like a grown man, sometimes I feel like a little boy.
Alan: Huh?
W: Sometimes I don't feel like a grown man, sometimes I feel like a little boy.
M: Is that the way you feel sometimes?
Alan: Yeah.
M: That's O.K. too.
Alan: I am the one that is going through all these changes. You're not. Right?
M: You're right.
Alan: Well, how can we, are we going to accomplish anything from this thing?
U: Don't you think we have?
Alan: No!
U: How do you feel about it? Do you feel the same towards Jim as you feel towards Joe?
Alan: Huh?
U: Do you feel the same towards Jim as you feel towards Joe?
Alan: No! Jim is my brother.
W: Joe whacked you on the ass, and Jim only wanted to screw you in the ass.
Alan: Yes, but (pause) Mr. Ulrich—?
U: Mmm huh!
Alan: The purpose of coming here was to talk, right?
U: I think that would be more helpful, yeah. But you have talked some and you will talk more.
Alan: Why do I get sick?
U: It will go away.
Alan: (moan, sigh) (2-minute lapse) Huh?

U: What do you want to talk about?
Alan: Wait a minute, Mr. Ulrich. Now, the —Ohh! Let me see. Oh! The main thing is to talk, right?
U: O. K.
Alan: Well, why ain't I doing it?
U: Well, what do you want to talk about? You can say what you feel.
Alan: Oh! I just feel sick!
M: Can we help, Alan, by talking to one another and then responding to what you say?
Alan: This is all right, right?
U: It's all right, Alan.
Alan: I mean, it's normal?
U: Effects of the drug; it's normal.
Alan: You sure?
U: Yes!
Alan: Watch out, I may throw up.
U: Want to talk?
Alan: I may throw up.
W: He may be a little shaky.
U: Yeah, wait a second.
Alan: Oh! Oh! (burps) Boy! (vomiting loudly) Oh! Oh!
U: You got a towel there?
Alan: (vomiting)
W: You're all right, Alan.
Alan: (still vomiting)
W: You should feel better, now.
Alan: Ohh—
U: You want your towel, now?
Alan: Ohhh! Ohhh! Ohh! Ohh!
U: Here.
Alan: Ohh! Ohh!! (more vomiting, now dry heaves). Oh! Oh!
W: You won't have to feel that way any more after today; after you have gone through all these things.
Alan: Oh! Oh! (burp) Oh!
U: Do you feel better now?
Alan: Oh! Oh! Oh! Oh! Oh!
W: Alan—remember?
U: You O. K. ?
Alan: Yes, what?
W: Alan, I want you to think now, very hard, about the happiest day in your life.
Alan: The happiest day in my life?
W: Yeah, what was it like?
Alan: All right, let me think; the happiest day in my life.
W: When things felt real warm and it was nice.
Alan: The happiest day in my life.
W: Yeah.
Alan: As a baby.
W: What was it like?—remember?
Alan: Yeah. That was something, wasn't it? (tone of voice has changed to calm and pleasant)
W: Good and warm—
Alan: What?

W: Nice and warm, when you were a baby.
Alan: Yeah. (turns over on side facing wall lying in "fetal" position)
W: Felt protected? (W and Alan talking slowly and softly, Alan maintaining curled-up position, breathing quietly and being silent for short periods)
Alan: Yeah.
W: People love you?
Alan: Yes—Oh!
W: That's pretty nice.
Alan: I'm all right.
W: You had a lot of good things in your life, you know, as well as bad!
Alan: Yeah—Oh!
W: What do you remember about being a baby?
Alan: Yeah, I want to be a baby.
W: Why don't you be a baby? You can do it now.
Alan: Yeah?
W: Sure, (pause)
Alan: Be a baby? What are you talking about—being a baby?
W: You can experience the same feelings right now.
Alan: What am I sweating about? (voice becomes irritable)
W: Because you've done hard work.
Alan: Can't nothing stay still for a minute? (irritated tone)
W: What was the most important—
Alan: *This is getting me pissed off!!*
W: Who was the most important to you when you were a baby?
Alan: Who, what?
W: Who was the most important to you when you were a baby?
Alan: When I was a baby? My mother, of course!
W: How did she treat you?
Alan: Like a baby.
W: Like a baby should be treated?
Alan: Yeah.
W: I guess she must have wanted you, huh?
Alan: Huh?
W: I guess she must have wanted you as a baby.
Alan: Why shouldn't she?
W: No reason why she shouldn't. I think it's pretty important to know that you were wanted.
Alan: Oh— (mumble) Oh—Are we getting anywhere?
U: Um huh.
Alan: You sure?
U: Sure, everything is all right.
Alan: Huh?
U: Everything's all right.
Alan: Everything's all right.
U: You said you felt like a baby?
Alan: Huh?
U: When you were remembering this best day of your life, do you remember anything more of this best day in your life?
Alan: When I was a baby?
U: Um huh.
Alan: Huh? (sighs) Now, look! (irritated)
M: What do you want us to know, Alan?

Alan: What I want you to know?—don't you understand?
U: Tell us and then we will understand.
Alan: Umm—What am I, going out of my mind?
U: No.
Alan: Well look, Mr. Ulrich!
U: Mmm.
Alan: Why can't I just talk about it?
U: I think you can.
Alan: What?
U: What's on your mind.
Alan: Oh!
M: It's O.K. to talk about anything, Alan.
Alan: With this drug or something else. Now—yeah, huh. (amused) I can see why they call it LSD. —I'm all right, ain't I?
U: Mm hmm, you're all right. You can talk about anything you want to talk about.
Alan: Talk about? *I'm trying to!* (irritated)
U: What are you trying to say? It's O.K. to say it.
Alan: I'm *trying* to! (irritated)
U: Good.
W: It's difficult to do so.
Alan: I'm *trying* to!!!—but Mr. Ulrich—!
U: Mm hmm.
Alan: How long have we been here?
U: About a couple of hours.
Alan: We all right?
U: Mm hmm.
Alan: You're sure?
U: Absolutely.
Alan: There's nothing wrong with us?
M: We're all fine.
Alan: Yeah—.
W: You are going to be able to do a lot with things you have gone through today.
Alan: Yeah—Uh, give me something to drink, will you?
U: What do you want, water?
Alan: Yeah, get this medicine taste out of my mouth. Huh! (giggle) He's laughing. (M didn't realize Alan was observing him, and made puckering and chewing motions with his mouth to indicate his memory of the taste in his mouth when he himself had LSD.)
M: What's that?
Alan: You must have knew what was happening, huh?
W: You know why he did it? He went like this (W imitates M's motions) because he had this kind of taste right along.
M: (laughs)
Alan: That's good.
U: That get rid of the taste?
Alan: Yeah, it helps me along too.
M: I had the same taste.
Alan: Yeah?—I'm all right?
U: Mm hmm.

W: What kind of feelings do you have toward us?
Alan: Now?
W: Mm hmm.
Alan: Right now?
W: Sure.
Alan: How old am I?
U: You're 23.
Alan: I'm 23. I'm 23 years old but I ain't acting like it, am I? The way I'm acting now?
M: How do you want to act?
W: You can feel anything that you want.
Alan: Oh, yeah?
M: It's up to you.
Alan: But—
U: But what?
Alan: But—
U: Do you want to feel young again? Do you want to feel like a baby again? You can.
Alan: But— Is everything all right?
U: Mm hmm. You can feel whatever age you want to feel.
Alan: Mr. Ulrich, is everything all right?
U: Everything is all right.
Alan: You're sure nothing can go wrong?
U: Positive! Nothing can go wrong.
Alan: Oh, all right.
M: Everything you feel is all right. Everything you think is all right. If it's the way you feel and think, it's O.K.
Alan: Yeah— We getting anywhere, Mr. Ulrich?
U: Mm hmm.
Alan: Huh?
U: Yes, we have quite a bit of stuff on tape already.
Alan: Yes, but what sense does it make?
M: That you can talk about it, Alan, and know that it is all right.
Alan: What's that?
M: Anything you want to talk about.
Alan: Yeah, but we are trying to get out of here.
U: We're trying to get out of here?
Alan: Boy, this is crazy! All of us.
M: It's different.
Alan: You're not kidding.
M: But that is all right too.
Alan: But how are you going to get anything out of this?
U: You've done a lot of work today.
Alan: Huh?
U: You've done a lot of work today.
Alan: Yeah, I know you said we did a lot of work but I can't see where.
U: We had plenty of thoughts and ideas that are going very fast.
Alan: Yeah, (gagging) Yeah, I'm not going out of my mind, am I? You sure?
U: No, you're not going out of your mind.

Alan: You sure?
U: Positive!
Alan: How long have we been here?
W: About two hours, I guess.
Alan: Two hours?
M: How long does it seem to you?
Alan: How long does it seem to me? A million years. Millions, more than that.
M: Do you know why it feels so long to you?
Alan: Why?
M: You have been going through a lifetime in your thoughts.
Alan: You mean all this here is a lifetime?
M: Look at all the things you thought about. Being a little child and how you are feeling now.
Alan: Yeah, but Mr. Ulrich—(pause)
U: What do you want to talk about?
Alan: It just whizzed by.
U: It just whizzed by? Do you remember what it was?
Alan: Do I remember what it was?
W: By this time, five other things have happened.
M: (Laughing)
Alan: Are you kidding or what?
W: No, I am not kidding.
Alan: Huh?
W: Not kidding, but things happen so fast.
Alan: Yeah, but, am I all right?
U: You're all right.
Alan: You sure I'm all right?
U: Mm hmm, positive!
Alan: I am going to be all right.
U: Do you remember that happy day when you were a baby? Do you remember that?
Alan: When?
U: The happiest day of your life, when you were a baby. Your mother wanted you.
Alan: The happiest day of my life. Am I going out of my mind or what?
U: No.
Alan: I'm not. You *sure* of this?
W: You're in the LSD state. This is the way it is supposed to be.
Alan: This is the way it is supposed to be? But I can— But how are we going to remember all this stuff?
U: What do you think is the most important stuff to remember?
Alan: Boy, everything is going so fast, Mr. Ulrich.
U: What is the one thing we are after?
Alan: Huh?
U: What's the one thing we are after? We're after one thing.
Alan: I am all right, ain't I?
U: Mm hmm!
W: It's O.K. for you to feel and think as you are.
Alan: Yeah, but it's so crazy!
U: That's all right too, it's the effect of the drug.
Alan: But, we're not getting no place, are we?

U: Yup!
M: Where do you want to get, Alan?
Alan: Where do I want to get?
M: You said we're not getting any place.
Alan: I don't know. Where do we want to get?
U: What do you think is important?
Alan: It seems that I can't see how we are going to get anything out of this. You know what I mean?—Yeah, I know. I know.
U: You can feel that way if you want to, but I feel we have gotten quite far, don't you?
Alan: Yeah!
W: Why did you wet your bed?
Alan: Why did I wet my bed?
W: Just really lazy? Didn't want to get up? Why didn't you get up?
Alan: Just lazy! I ain't lazy!
W: Why did you wet it?
Alan: I couldn't wake up.
W: What did you want to do instead of waking up?
Alan: What did I want to do instead of waking up? I wanted to sleep, right? Certainly!
M: So then you weren't lazy.
Alan: No, I ain't lazy.
M: You wanted to sleep rather than wake up.
Alan: Now, it's all confused.
U: What did your mother want you to do?
Alan: Huh?
U: What did your mother want you to do?
Alan: What did my mother want me to do?
M: Did she want you to sleep or did she want you to wake up?
Alan: What are you talking about?
U: You were wetting the bed, remember?
Alan: What was he just talking about?
U: He wanted to know what your mother wanted you to do in regard to your wetting the bed.
Alan: About my what? My wetting the bed?
U: Mm hmm.
Alan: What do you mean?
U: Did your mother want you to wet the bed?
Alan: No.
U: But she wouldn't slap you on the ass, would she?
Alan: Mr. Ulrich, I'm normal?
U: You're all right. It's O.K. to feel this way.
Alan: You're sure?
U: Mm hmm.
Alan: All right.
U: What do you feel?
Alan: Now?
U: Mm hmm.
Alan: O.K. —Are we getting any place?
U: Mm hmm.
Alan: Are you sure?
U: Mm hmm.

Alan: Are we, Dr. Ward?
W: Yes. The experiences you're having are going to be meaningful to you, even though you don't talk about them. They will have their effect.
Alan: Now, we're getting sick again.
W: If you tell it very definitely to go away, I think it will go away.
Alan: Yeah, it probably will.
W: Yes, it will.
Alan: Huh!
U: It's going away?
Alan: Did what go away?
U: You were feeling bad, but it went away now.
Alan: What went away?
U: Your bad feelings.
W: Things are going so fast Alan, just go with them.
Alan: Huh?
W: Things are going so fast, just let them go on.
Alan: Yeah, but we're not getting no place, are we?
U: Yes, we are. Don't worry about it, just let your mind drift.
Alan: All right, just let my mind drift, right?
U: Mm hmm.
Alan: Just let my mind drift? What do you mean?
U: Be whatever you want to be, or think whatever you want to think.
Alan: Oh! I am not going out of my mind, am I?
U: No, it is just the effects of the drug.
Alan: You sure?
U: Mm hmm.
Alan: Well then, how come I feel sick?
U: I think you can make that feeling go away, can't you?
Alan: Huh?
U: You can make that feeling go away, can't you?
Alan: Make it go away?
W: The devil with it.
Alan: Yeah, but are we all right?
U: Yes, we are all right.
Alan: We are all right, right?
W: We are finding out what a complicated human being you really are.
Alan: It's pretty mixed up. Boy, this is something! This is really something—yeah, but what's he singing? (radio outside room) He's getting on my nerves.
M: That's what happens, Alan, any noise, you're very sensitive to it.
Alan: Yeah, I know I'm sensitive to noise but, yeah, but why am I so sick?
W: It happens in waves, and I think it has something to do with things coming out in your mind and it leaves very rapidly.
Alan: Yeah.
M: Do you notice it comes and goes, Alan? Being sick?
Alan: Yeah.
M: Do you notice it?
Alan: Yeah, it comes and goes, comes and goes. How about that? (pause)
W: What did your mother want you to do to her?
Alan: What did my mother want me to do to her? What did my *mother* want me to do to her?

W: Yes.
U: It's all right to say what you feel.
Alan: It's all right to say what I feel?
U: Mm hmm.
Alan: What did you ask me?
W: What did your mother want you to do to her?
Alan: She wanted me to *fuck* her, of course!

(End of tape. Period of silence while tape was changed.)

Alan: I ain't sure. You sure there is no chance of my going out of my mind?
U: Positive! No chance of you going out of your mind.
Alan: All right.
U: How did your mother make you feel?
Alan: How did my mother make me feel? Oh, I am getting sick.
W: That is the way your mother made you feel? Sick?
Alan: What are you talking about? What are you talking about?
W: About the way your mother made you feel.
Alan: What are you talking about?
W: How your mother made you feel.
Alan: I am sick.
U: Is this how your mother made you feel? Sick?
Alan: Mr. Ulrich— (2-minute lapse) Oh! (gagging slightly) This is something, Dr. Mintz.
M: Yes, it is.
Alan: (moans) (3-minute lapse) Will I ever be happy?
M: Yes, sure you will.
Alan: When?
M: When you have happy thoughts and happy feelings.
Alan: Then, why do I feel so sick?
U: Did your mother make you feel sick?
Alan: Huh?
U: We were talking about your mother and then you—.
Alan: Sure.
U: Why did she make you feel sick? What did she do to you that made you feel sick? It's all right, you can tell us.
Alan: These changes are so fast. What did you say?
U: What did your mother do to you that made you feel sick?
Alan: What did she do to me to make me feel sick?
U: Mm hmm.
Alan: We going to remember all this?
U: Mm hmm.
W: Did your mother drink?
Alan: No. Why do you ask me that?
W: Just curious.
Alan: Huh?
W: Just curious.
Alan: She doesn't drink.
M: Do you drink?
Alan: Huh?
M: Do you drink?

Alan: Not too much, (groans, 1-minute pause) Oh, Mr. Ulrich, I am all right, ain't I?
U: You're all right.
M: What are you thinking about now, Alan?
Alan: Right now? What am I doing in jail?
M: What do you think about that?
Alan: Being in jail?
M: Yes.
Alan: I hate it. That's no life. Right?
M: Right!
U: When you were a little boy did you ever sleep in bed with your mother?
Alan: When I was a little boy?
U: Mm hmm.
Alan: When I was a little boy. Mr. Ulrich, what did you say?
U: When you were a little boy did you ever sleep in the same bed with your mother?
Alan: When I was a little boy? Huh?
U: When you were a little boy did you ever sleep in the same bed with your mother? (pause)
Alan: This is all part of it?
U: Mm hmm, this is all part of it.
Alan: Getting sick like this?
U: It will go away.
Alan: Huh?
U: It goes away very quickly.
Alan: (3-minute lapse) (sighs, heavy breathing)
M: What do you want to say", Alan?
Alan: Huh! Might as well forget about it now!
M: Went by so fast.
Alan: Huh!
M: Went by so fast?
Alan: Yeah, just for the sake that I am all right.
All 3: Sure, mm huh.
Alan: That is the main thing, that I am all right. I am reliving these things, but I am all right! I am all right!
U: You're reliving these things.
M: It is a good feeling to feel all right, isn't it? And to remember these things?
Alan: Yes, but—I can't go out of my mind.
U: No.
M: What have you done Alan, that you're afraid that you will go out of your mind? When have you thought of this before?
Alan: When did I think I was going out of my mind? When I was in jail. Right?
M: Is that when you thought it? (pause)
Alan: Boy, these are—
W: Did you ever see your mother naked?
Alan: Huh?
W: Did you ever see your mother naked?
Alan: Did I ever see my mother naked?
W: Yeah.

Alan: Certainly!
W: A lot of times?
Alan: Mr. Ulrieh, why am I getting sick?
U: It will go away shortly. A lot of times?
Alan: (sound of saw in background) That saw!
M: It's annoying, isn't it?
Alan: Yes. Am I all right?
U: Mm hmm.
Alan: It's just the LSD, right?
U: Right.
W: The LSD is letting you live through so many things.
Alan: Huh?
W: The LSD is letting you live through so many things.
Alan: What are we going to sing?
U: No.
W: When was the last time you saw your mother naked?
Alan: When was the last time I seen her naked? I was pretty young. Boy, these things are going so fast aren't they, Mr. Ulrich?
U: That is all right too.
Alan: I am glad we got it taped.
U: So am I.
W: Can you see the last time you saw her when she was naked?
Alan: Who?
W: Your mother.
U: Can you see her face?
Alan: Who?
U: Your mother.
Alan: Huh?
U: Can you see your mother's face?
Alan: Can I see my mother's face? Huh?
U: Can you see your mother's face the last time she was naked? Can you see your mother's face—if you try?
Alan: What?
M: Dr. Ward asked you, when was the last time you saw your mother naked? You said when you were a little boy. Mr. Ulrich said, can you picture her face now? Can you picture her face?
Alan: Who?
M: Your mother.
Alan: Can I picture my mother's face? No! Wait a minute!
U: You can see her hair though, can't you?
Alan: Who?
U: You can see her hair.
Alan: My mother's hair? Yes, I can see her hair.
U: Yes, you can see her hair, but you can't see her face?
Alan: Mr. Ulrich!
U: Mm hmm.
M: You're all right, Alan.
W: How old were you when you saw your mother naked?
Alan: Huh?
W: About how old when you saw her naked body?
Alan: Who?
W: Your mother.

Alan: How old when I seen her? (siren goes off) Count!
W: Right.
Alan: Phew!
W: About how old were you when you saw your mother naked? (pause)
Alan: There is no chance of me going insane?
U: No chance at all!
Alan: You sure of this?
U: Positive!
Alan: Yeah, huh. What did you say, Dr. Ward?
W: How old were you when you saw your mother naked?
Alan: How old was I? How old was I when what?
W: Saw your mother naked?
Alan: How? What? What did he say? How old was I when I saw my mother naked?
M: How old were you when you saw your mother naked, the last time? The last time you saw your mother naked, how old were you?
Alan: How old was I? Oh!
U: Just roughly.
Alan: (sighs, groaning) Mr. Ulrich, am I all right?
U: You're O.K.
Alan: Wait a minute, wait a minute. Go ahead.
M: Are you finding it hard to remember the questions?
Alan: Yes.
M: Things are going fast for you..What do you want to know now, Alan?
Alan: What, are you kidding me? (laughs)
M: About what? (1-minute lapse)
W: He is finding it difficult to differentiate between what is the LSD effect and what it is he does not want to remember.
Alan: Yeah, now. Wait a minute. What, are you kidding me again? What time is it?
U: 11: 20.
Alan: Twenty after eleven?
U: Yeah.
M: It is hard to remember, isn't it?
Alan: Yes, but, ah—!
M: You asked me, Alan, am I kidding you or something. Kidding you about what?
Alan: What, am I going out of my mind?
W: Nope!
Alan: Huh!
M: No. (3-minute lapse)
M: What are you thinking, Alan, that you think you're going out of your mind?
Alan: What am I what?
M: You asked me if you're going out of your mind.
Alan: Yeah.
M: What are you thinking, that you think you are going out of your mind?
Alan: Oh! (2-minutelapse)
W: You are having trouble remembering how old you were when you saw your mother naked. You start thinking about it and then you wander off the subject.

Alan: Yes, wait a minute. How long have we been here?
U: A couple of hours. (someone outside yells)
Alan: What's he screaming? What? (long pause)
U: You have been having trouble telling us how old you were when you last saw your mother naked. Can you remember how old you were, just roughly?
Alan: How old we were? Huh? How old who was?
U: How old were you?
Alan: How old was I, Dr. Ward? Mr. Ulrich? Am I all right?
U: You're all right. You can tell us how old you were when you last saw your mother naked.
Alan: What?
U: You can tell us how old you were when you last saw your mother naked.
Alan: How old was I?
U: Mm hmm. (2-minute lapse) It's O.K.
Alan: What did you ask me?
U: How old were you when you last saw your mother naked.
Alan: Yeah.
W: Did she know you were looking at her when she was naked?
Alan: Huh?
W: Did she?
Alan: What did you say? What did he ask me?
U: Did your mother know you were looking at her when you last saw her naked?
M: Those bells interfering with your thinking, Alan?
Alan: Yes. Just have to get the last thing down. Here they come. I mean...
W: These things slowing down a bit now?
Alan: No! No! Now, look.
U: Mm huh.
Alan: (groans) What?
W: I said, are things beginning to slow down?
Alan: That *fucking buzzer!*
W: Yeah!
Alan: Wait a minute, that *fucking buzzer!*
M: It is as annoying to us as it is to you.
Alan: Boy, this is really something, right?
U: Yup.
Alan: (laughs) Fascinating, yeah. How long have we been here?
W: Well, we started about 8:45 and it is now 11:30.
Alan: Uh, uh, uh, we started—
W: Two and three-quarters hours, Alan.
Alan: (moans, sighs, 3-minute lapse) That music.
U: Yeah, I think it is from some other wing, (radio outside)
M: How does the music interest you?
Alan: Yeah, yeah, yeah, yeah.
U: What?
Alan: (moans) Yeah.
U: What?
Alan: Dr. Mintz, you remind me of Dr. Johnson, the dentist that went to pull my teeth.
M: In what way?

Alan: I was scared, right? Yeah, I was scared.
U: But you're not scared now?
M: Are you scared of me, Alan?
Alan: Wait a minute, (laughs)
M: What's funny, Alan?
Alan: Yeah, (laughs)
U: How old were you when you went to Dr. Johnson?
Alan: How old was I?
U: Mm hmm.
Alan: How old was I when I went to Dr. Johnson? Let's see. How old was I when I went to Dr. Johnson?
U: Mm hmm.
Alan: (laughs) Well, wait a minute, (laughs) What was that?
U: How old were you when you went to Dr. Johnson?
Alan: Johnson? Dr. Johnson. To pull my teeth out. How old was I?
U: Mm huh! How old were you then?
Alan: Oh, I guess I was about seven or eight. Wait a minute. Let me think. What! Are you kidding me? (laugh)
U: How old were you when you last saw your mother? (Alan interrupts)
Alan: Wait a minute, wait a minute. I like that music. How come I can hear the music so plain?
W: That is part of the LSD, all sounds are very vivid.
M: How does the music make you feel, Alan?
Alan: Wait a minute. How does the music make me feel? Wait a minute (squirming, restless). The music is stationary. The rest of it keeps on moving. How come?
M: Maybe the LSD effect. (Alan extends foot) Did you want to touch me with your foot to see if I am here?
Alan: No, wait a minute. This is all— (sighs, makes sounds like sobbing, laughs)
M: What are you thinking about, Alan?
Alan: Well, what I am thinking about is that— (pause)
U: Is that what, Alan? (Alan interrupts)
Alan: Huh?
U: Is that—
Alan: Now, let me get this straight. Wait a minute (laughs). Wait a minute.
M: Are your thoughts slowing down a little?
Alan: Wait a minute. Are my thoughts slowing down a little? (pause) Oh, appendicitis, (groans, moans)
W: Did you have appendicitis?
Alan: Yes.
W: What do you remember about it?
Alan: My appendicitis?
U: Mm hmm.
Alan: So many—
U: Too many!
Alan: Oh! Oh!
U: Alan, do you care if I leave the room for a minute to get a cup of coffee?
Alan: Wait a minute! Wait a minute, just a minute! (3-minute lapse) I am all right, this is all part of the LSD?

U: Yes, you are going to tell me something.
Alan: Wait a minute! Wait a minute! Wait a minute!
U: What were you going to tell me?
Alan: (laughs)
M: What are you thinking about, Alan, that you are laughing?
Alan: Wait a minute! Wait a minute! (laughs)
M: Are you waiting for the noises to stop?
Alan: (coughs) Let me get my bearings. Uh, let me see. (sings) Maybe I'll be lonesome too—(responds to song on outside radio)—I am blue.
M: Ask him if he knows the title of the music. Do you?
Alan: (laughs) "You Belong To Me." (laughs)
W: Who belongs to you?
Alan: Wait a minute! Wait until get my bearings! Where were we?
U: Where do you want us to be?
M: Listening to the music? (Alan laughs) (4-minute lapse)
U: You seem pretty happy now.
Alan: (laughs) You mean to tell me we got all this taped?
U: Mm hmm.
Alan: (laughs) You went through this?
U: What is on the tape that you might not want on it?
Alan: I am not going out of my mind, am I?
U: No, you are not going out of your mind. Is there anything on the tape you want us to take off? (pause) Things slowing down for you?
Alan: Wait a minute!
W: Alan, how much hair does your mother have around her pussy?
U: It's all right to answer.
W: I think that is what is happening—the music is coming to him and he is responding to this. Good experience.
Alan: You asked me how much hair does my mother have around her pussy?
W: Mm hmm.
Alan: (laughs) This is my own life I am dealing with, right? (hears music in background) Wait a minute!
W: Would you rather go with the music or shall we shut the window so the sound isn't so loud?
U: Do you want us to shut the window? (pause)
Alan: You want me to shut the window?
U: What do you want? Do you want the window shut?
Alan: I realize that this is all part of it. We were talking about the window being shut. You're right, you do have full control.
U: Full control of what?
Alan: Of your mind, (laughs)
M: Alan, do you want to listen to the music or do you want to talk to us?
Alan: Wait a minute. It's a—(laughs) (pause) It's five minutes of twelve, right?
W: I wish there was a way we could silence those noises.
Alan: No sooner here than they're gone.
M: Feel good listening to the music?
Alan: Yeah, very good. Music really does something for you. It does for me.

M: What does it do to you?
Alan: Music stimulates me.
M: It makes you feel good?
Alan: What did you say?
M: How does the music make you feel when it stimulates you?
Alan: How does music—Wait a minute!
M: How does the music make you feel?
Alan: Wait a minute! (laughs, sighs, becomes restless)
U: Be right back, Alan!
M: How does the music make you feel?
Alan: Music makes me feel good. Makes me feel very good.
M: Makes you feel like you want to get laid?
Alan: (groans) What did you say?
M: Does music make you feel you want to get laid?
Alan: No! (pause) What did you ask me again?
M: Does the music make you feel like you want to get laid?
Alan: Yeah! (laughs)
M: Who would you like to lay, Alan? (pause) Who would you like to lay?
Alan: My mother!
M: Feel that way about your mother-in-law too?
Alan: (pause) It's my life we're dealing with, right?
M: That's right, Alan. Remember what I asked you, Alan?
Alan: Yeah, I remember. —It's 12 o'clock?
M: Five minutes.
W: It's chow-time?
U: She will have to send for it. (meaning the nurse)
Alan: What did you say?
M: Would you like to lay your mother-in-law?
Alan: Yeah! (sighs; is restless)
W: (Talking to U) While you were out Alan agreed the music made him feel like he wanted to get laid. We asked him who, and he said his mother.
M: Laying your mother-in-law is like laying your mother, isn't it, Alan?
Alan: Yeah! Laying your mother-in-law is like laying your mother!
M: She's older!
U: What are you thinking, Alan?
Alan: (long pause) It's it! A— (sigh) Music?
U: You feel safer with the music?
Alan: It's welcome.
M: Do you think that's why you enjoyed laying your mother-in-law, you felt closer to an older woman?
Alan: Yes! Probably! Yes!
W: Is it all right with you if we do close the window?
Alan: Music.
U: Is it OK to close the window?
Alan: No, music!
W: Would you like a lot of music?
Alan: She moved to—What did you say?
W: Would you like a lot of music? We have a record player with lots of records. (3-minute lapse)
Alan: Wait a minute. What were you saying?
W: I said we can get you some music if you like.

Alan: Yes.
U: Do you like music when you talk about unpleasant things?
Alan: "Mr. In-Between" (talking of music in background)
U: Is that what's playing now?
M: Alan, if you can, I think it would be helpful if you concentrated on what we are talking about rather than the music. I know the music is frustrating.
Alan: (laughs) What were we talking about?
U: We were talking about your mother.
M: You said, yes! Laying your mother-in-law was like laying your mother.
Alan: Yes!
U: You felt guilty, laying your mother-in-law? Never lasted very long, did it?
Alan: No.
U: Never made your mother-in-law happy this way, did you?
Alan: I never made her happy?
U: Sexually.
Alan: My mother-in-law? Because everything happened so fast!
M: Did you feel it was wrong laying your mother-in-law, and that's why you did it so fast?
Alan: Yes! No! It's wrong to do it to my mother.
M: It was wrong to do it to your mother-in-law?
Alan: No!
M: But doing it to your mother-in-law was like doing it to your mother.
Alan: Yes!
M: That's why it was probably so fast, Alan, because it made you feel like you were laying your mother and you felt guilty.
Alan: (sigh)
M: Do you understand what I'm saying, Alan?
Alan: Yes.
M: You see Alan, you actually were not laying your mother, you were laying another woman.
Alan: Yeah, but—ah, ah— I wanted to. I wanted to lay her.
M: Sure, so did all these other men.
U: Do you think Jim was sleeping with your mother?
Alan: No!"
U: No, but he was closer to your mother than you are?
Alan: Yes.
M: That's one way of getting closer to your mother than Jim was.
U: You could beat Jim out that way. You would win and you always lost with Jim.
Alan: You're saying....
M: You beat Jim out for your mother's attention by sleeping with your mother-in-law. It was like your mother.
Alan: Yeah, it was getting even. I know what you mean. Boy, this is—
M: Getting back at Jim or beating Jim out is pretty important to you?
Alan: Yeah, I beat Jim out, that's right! (sounds of airplanes) Airplanes, yeah. George. He died that way, in an airplane crash.
U: Who was he?
Alan: I remember him, he used to ride over the backyard of our house and my mother would wave to him.
M: Was he sleeping with your mother?

U: Was he?
Alan: Who?
U: George... Was he sleeping with your mother? Is that why she waved to him?
Alan: Let me get the name clear. Ah—we are definitely getting some place.
M: You are! Good!
Alan: George something, I can't remember. George—
U: What did you think of him? He was getting closer to your mother than you were. How do you feel about George?
Alan: Yeah, he was getting more attention than I was. Ah—let me get my bearings here again.
U: Your mother waved to him.
Alan: Yes, she waved to him in the plane.
U: Mm hmm.
M: You must have felt that everybody was getting more attention from your mother than you, and you wanted her attention.
Alan: Yeah, I wanted her attention.
M: And the closest you could come to it was your mother-in-law.
Alan: Yes, she was—(pause)
M: She was a substitute?
Alan: Yes, she was a substitute.
U: Your mother wanted you to be good, but she did not care about the others. She did not care if Jim was bad. She did not care if she slept with the other men, right?
Alan: Yeah, and the other men.
U: There were too many.
Alan: Yes!
U: Too many.
Alan: Too many men!
M: Did you feel unloved, Alan, that she wanted everybody but you?
Alan: Yes, huh—.
U: So you went out to hunt and find where your father was. You found your father, and you wish you hadn't, though?
Alan: Found my father.
U: You found your father. What did your father do to you when you found him?
Alan: Reject!
U: Yeah, and he reminded you of Jim too, didn't he?
Alan: I hate him!
U: Hated him!
Alan: That's right. Just like Jim did.
M: Where did you finally find love, Alan?
Alan: Where did I finally find love?
M: Your mother-in-law?
Alan: Yes, my mother-in-law. (start of music Alan asked for)
W: Is that loud enough?
Alan: It's just right.
M: Do you feel your wife gave you love, Alan?
Alan: Pardon?
M: Do you feel your wife gave you love like your mother-in-law did?

Alan: Ah, motherly love, ah—my mother-in-law gave me motherly love, but —it's beautiful, isn't it?
U: But not your wife, she didn't give you motherly love?
Alan: Music knocks out everything. Ah— what did you say?
M: You said your wife didn't give you motherly love the way your mother-in-law did. This is what you wanted at the time?
Alan: Yes! Yes!
U: Why was this?
Alan: Boy, that music!
W: That's a lovely way to listen to music, (all laugh)
Alan: Beautiful!
M: Excuse me for a minute, Alan, I have to go to the men's room.
W: Does music bring you experiences, images and so on?
Alan: Yes.
W: What kind of images?
Alan: Music to me just—(sigh)
U: What do you feel like? (2-minute lapse)
Alan: Play it again. —Grand finale?
M: Would you excuse me? I have to leave now. I have another appointment that I have to go to.
Alan: Oh, O.K.— (long pause) Don't leave me, now. Ma, don't leave me!
U: Think your mother will leave you? Think your mother should leave you?
Alan: Boy, that music is out of this world. What did you say, Mr. Ulrich?
U: Do you think your mother should leave you?
Alan: No, I don't think so. She shouldn't leave me. She left me.
U: When did she leave you?
Alan: Three or four.
U: You were three or four years old when your mother left. She didn't give a damn about you after that?
Alan: Yes!
U: But she didn't give you the attention she gave other men.
Alan: No.
U: She did not give you the attention she gave Jim?
Alan: No.
U: You beat Jim out though, because you screwed your mother-in-law. That beats Jim.
Alan: Yeah, I beat Jim out, I have to beat Jim out. I had to beat Jim out. There's something here. I don't know—
U: You beat your father out too, didn't you?
Alan: Um, I got to beat Jim out.
U: What about Roy?
Alan: Roy? He's a good kid.
U: You don't have to beat him out?
Alan: No!
U: Maybe he's like you?
Alan: Roy?
U: Yeah!
Alan: Roy's good.
U: Maybe he didn't get as much of your mother's attention.
Alan: He didn't need it.
U: You're the only one that needed it?

Alan: I needed it most of all. I needed it. Needed love. Where's Dr. Mintz?
W: He had to leave; he had to be in New York. He said good-bye, Alan.
Alan: Uh—where are we?
U: You said you needed love.
Alan: Yeah, I needed love and it seemed like she was throwing me out and leaving me behind. Behind!
U: So she tried to seduce you and then left you behind? It that it?
Alan: Pardon?
U: She tried to seduce you and then left you behind?
Alan: No.
U: She didn't try. She never wanted it. Is that it?
Alan: I wanted her to want me.
U: She did for a little while when you were a baby.
Alan: Yeah, that's all.
U: That's all?
Alan: Just for a little while, while I was a baby.
U: How old were you when she didn't want you?
Alan: You asked me how old I was when—
U: When you felt your mother lost interest in you?
Alan: About—never!
U: Never?
Alan: I realize this is all part of—What did you ask me, Mr. Ulrich?
U: I asked you how old you were when you felt your mother left you, lost interest in you.
Alan: Ah— a baby.
U: What about Jim? Don't you think she ever lost interest in Jim, or do you think she lost interest in him too?
Alan: Jim, always Jim, never Alan.
U: Always Jim, never Alan? Always Jim what?
Alan: Always Jim. He always got away with it.
U: What did Jim get away with?
Alan: Everything he did.
U: What kind of things did he do?
Alan: Getting drunk, running around with Jack all the time.
U: Who is Jack? Did he stay with your mother, too?
Alan: No, he is a friend of Jim's.
U: A friend of Jim's. But George stayed with your mother, huh?
Alan: Yes.
U: What did you think of George, Alan? Do you feel the same way about George as you do towards Jim?
Alan: Yes.
U: How old were you when George was around? (long pause) Did George treat you like Joe did?
Alan: (long pause) What did you ask?
U: Did George treat you like Joe did?
Alan: No, he was better.
U: He was better. How old were you when George was around?
Alan: Oh, five or six.
U: And he flew an airplane?
Alan: Yes.

U: Why did he leave your mother?
Alan: It seems she couldn't be satisfied with one.
U: Your mother couldn't be satisfied with one man?
Alan: No, she had to have a lot, you know.
U: So, most of the time, when men left, this was your mother's fault?
Alan: Uh huh!
U: How did this make you feel? Were there any of the men you wished would have stayed?
Alan: (long pause) What were you saying, Mr. Ulrich?
U: I said were there any of these men that stayed with your mother that you wished would have stayed? That your mother wouldn't have got rid of?
Alan: No, just me!
U: Just you. You wanted her to get rid of everybody but you? You wanted her to get rid of Jim?
Alan: (pause) Yeah.
U: What about Ralph? Want her to get rid of him too?
Alan: Just me and Mom.
U: Uh huh! Did she ever feel this way about you?
Alan: I wish—
U: You say you wish?
Alan: Uh huh. I wanted her to.
U: Mm hmm.
W: Remember you said that before, quite a long time ago, that your mother wanted you to fuck her. I was wondering how you got to know this?
Alan: What did you say?
U: Before, you said your mother wanted you to fuck her.
Alan: Mother? (long pause)
W: I was wondering how you knew.
Alan: What was that question?
W: I said, before, when we were talking, you said that your mother wanted you to fuck her. My question was, how did you get to know this?
Alan: (long pause) Are we getting some place?
U: Uh huh. (long pause) You're having trouble answering that one?
Alan: What was that, Mr. Ulrich?
U: At one point when we were talking, you said that you knew your mother wanted you to fuck her. The question was, how did you know this?
Alan: I don't know.
W: Another difficult point that we never quite got through on was, we talked about seeing your mother naked. You said it was a long time ago, you were young. We tried to get you to find out how old you were when this happened. The last time, do you recall?
Alan: A long time.
W: Were you a real small kid? Ten? Sixteen?
Alan: What was the question again?
W: We were talking—you've been having difficulty with this question all day long, because this is what happens—but it was about you seeing your mother naked. How old were you?
Alan: I seen her in the mirror once.

U: How old were you then?
Alan: Seventeen, I guess.
U: Before you were married?
Alan: No.
U: After you were married? How did this make you feel?
Alan: Excited.
W: How did it make you feel?
Alan: Excited.
W: Did she know you had seen her?
Alan: Huh?
W: Did she know you had seen her?
Alan: No.
W: (to Mr. Ulrich) Have you ever gone over how having sex with the mother-in-law makes him feel? This kind of thing?
U: Yes, we went over it.
Alan: Guilt! Guilt!
W: Guilt?
Alan: Guilt!
W: This is what you feel about it?
Alan: Uh huh.
W: But what were the actual events? Did you ever elicit that?
U: I think we did, I think that's what we covered while you were out. Why mother-in-law, and so on, and the connection between—
W: No. How did it happen?
U: Oh! Oh, no! I don't think we did, did we?
Alan: What?
U: How your relationship with your mother-in-law started.
Alan: Let me think, (laugh)
U: You were living with your wife, at your mother-in-law's house, right?
Alan: Yeah!
U: Your wife was very young.
Alan: Yes!
U: And then what happened?
Alan: Pardon? (long pause)
U: Do you remember?
Alan: Young. My mother-in-law's house.
U: And what happened?
Alan: (long pause) Me!
U: What did you do?
Alan: Why not me?
U: What happened, what? (long pause) What did you hold back?
Alan: Start over again.
U: Start what over again?
Alan: From—the whole thing.
U: What whole thing?
Alan: Right.
U: When you mention mother-in-law, it starts it over again. Here was someone who cared for you again.
Alan: Yeah!
U: Like when you were two years old. Then what did you do?
Alan: Security.

U: Did your mother-in-law make advances to you?
Alan: Yes.
U: She started it; you didn't, is that right?
Alan: No.
U: What happened?
Alan: She helped it along.
U: She helped along, but you started it?
Alan: Uhhuh.
U: What about your mother? Did she help it along? Did your mother help it along, too?
Alan: No.
U: You started it there, too?
Alan: Wait a minute. Everything is so mixed up. What were you saying, Mr. Ulrich?
U: We were talking about your relationship with your mother and your mother-in-law. You said in the case of your mother-in-law that you started making advances towards her first, and she helped things out. And I said, was this the same way it was with your mother? Did you start things with your mother or did your mother first start things with you?
Alan: I cannot remember.
U: You were very young. You were a couple of years old when your father left, weren't you?
Alan: Younger.
U: Younger? Why did he leave?
Alan: Why did he leave or why did he leave my mother?
U: Why did he leave both of you?
Alan: Grandfather.
U: Your grandfather? What did your grandfather do? (long pause) Your mother loved you and your father left and then your mother didn't love you. Is this what you feel bad about?
Alan: Yes.
U: Do you feel you had something to do with your father leaving?
Alan: No, my grandfather. He had something to do with it.
U: What did he have to do with it?
Alan: He had a lot to do with it, a whole lot.
U: How did you feel towards your grandfather?
Alan: O.K. Platonic.
U: Your grandfather raised you for some time, didn't he?
Alan: Yes! (pause) Boy, that music!
U: How did you make advances to your mother-in-law? What did you do?
Alan: Just kidded around.
U: Then what happened?
Alan: She did the same.
U: And then?
Alan: Then she cried.
U: She cried. What did she cry for?
Alan: She didn't want her daughter to find out.
U: How did you feel?
Alan: I couldn't help what her daughter wanted. I was just worried about myself.

U: You were not getting it from her daughter?
Alan: No!
U: Why weren't you getting it from her daughter?
Alan: She couldn't give me love because I didn't love her.
U: This your fault again?
Alan: No.
U: Whose fault is it?
Alan: Jim.
U: Jim?
Alan: It's his fault.
U: Why is it Jim's fault? (long pause) But you got even with Jim, right?
Alan: Can't, because he always has one on me.
U: What has he got on you, now? (long pause) How do you feel?
Alan: Sick. It's awful in here. How did we do?
W: Good, very good.
(Discussion among staff as to whether they should continue, or terminate the session and let Alan rest and listen to the music.)
Alan: No, wait.
W: You won't be left alone. Don't worry.
Alan: I want to get it, whatever we come after. Right, Mr. Ulrich?
U: Yeah!
W: We've got a lot of stuff.
Alan: Yeah, but—
W: Alan, there are a couple of areas we have not gotten into, we would like to look at.
Alan: Yeah, give them some air.
W: Give them some air?
Alan: I want to air them out. Get them out.
U: What areas are you interested in, Alan?
Alan: Kids in the playground.
U: Kids in the playground? Do you remember kids in the playground?
Alan: Yeah, we were in school, public school.

(End of tape)

DISCUSSION

Mrs. McCririck: Doctor, you say that under the drug he regressed back to infancy. I take it to mean the breast period?

Dr. Ward: Well, not specifically that. It was when he had the happiest day of his life. And then he rolled over on the bed and curled up in a ball. He and I then talked about the delights of being with mother; breast was not mentioned.

Mrs. McCririck: So he was happy at that age; he felt he was happy, he felt that mother was good at that age?

Dr. Ward: Yes.

Mrs. McCririck: I see. In other words he did have a good start originally,

so it was really perhaps when brother was born that—Would you say that—

Dr. Ward: No, it was an older brother.

Mrs. McCririck: Oh, it was an older brother; I thought you said he felt jealous about a younger brother. So he had a good start in life?

Dr. Ward: Yes. The change came somewhere around the age of five or six.

Mrs. McCririck: I see.

Dr. Fremont-Smith: Any further comments? Yes, Dr. Grof.

Dr. Grof: I was wondering if the Goodenough criteria were applied to the drawings, trying to measure the depth of regression which the patient experienced under LSD, making him draw figures. I wonder whether you've tried to apply these criteria and to compare the contents of the psychosis with the level of regression indicated by the Good-enough criteria?

Dr. Ward: My colleagues, who are psychologists, do this. I don't know enough about it to take it up for you in detail.

Dr. Mogar: I was wondering if Dr. Ward could indicate the course in time of his three MMPI testings with the pictures on the board, and see if we might find some relationship between the MMPI scores and the sketches.

Dr. Ward: The MMPI's were given at the same time, on the same day with these three drawings. The first (Fig. 4) is three days prior to LSD, the second (Fig. 5) is four days after LSD, and the third one (Fig. 6) is two months later when he was paroled. He took them separately; the psychologist has told me that this drawing is much more of a defensive kind of thing just before parole, which does correspond with the K scale going up significantly as the MF comes down. Of the three scales which change after LSD, the SC stays down in the third testing even though the K and MF tend to return to pre-LSD levels. There weren't any large changes of the other scales in the MMPI profiles.

Dr. Ling: I'm still not clear what happened subsequently. He married the same sort of girl. This, of course, is automatic; I think almost all of us would expect this.

Dr. Ward: After he got out of prison he did visit his mother-in-law, but had nothing to do with her sexually. He didn't get involved in the family pathology; that was unchanged. His brother had been paroled before him; this brother is now back in prison. The patient got a job, was functioning quite well, got married, but then he began to slip; and when I saw him last—unfortunately—last September, he found himself going out and having sexual relations with other women and also drinking a bit—beer, and not getting drunk, and not engaging in any criminal activities. The difference between his pattern before he was incarcerated and now is that originally he was running out on his first wife without any guilt whatsoever. When I saw him last September he was puzzled; he had a great deal of guilt about it, he was saying, This is wrong," and had a great deal of anxiety about it; and he would have gone into therapy but there was a financial block here.

One of the things I'd like to bring up is not in my paper necessarily, but regards the change with LSD. It appears to me that many things I've found reported in the literature as direct effects of LSD are misconceptions because many of the studies are done on people taking LSD for the first time. It's my experience and feeling that a lot of the physiologic responses, a lot of the feelings people have, are not physiologic but psychogenic; and as you give LSD more than once to the same individual, these somatic reactions fall out of the picture. So I think that a good deal of the physiologic response in the first session is really a psychogenic response to stress rather than the specific physiologic effect of LSD.

Dr. Fremont-Smith: Thank you very much. May I make a comment? I don't believe we have any way—in fact—I think it would be a false position to make a separation between psychogenic and physiologic! There is no way in which any psychological phenomena can occur other than through physiological change. So perhaps you could say that this is what we commonly measure at the physiological level, and this is what we like to measure at the psychological level (because we don't know how to measure it physiologically) because we don't conceive of psychological phenomena which are not induced by biochemical, biophysical and physiological changes.

Dr. Ward: What I meant was that a lot of the changes are the reactions to an anxiety-provoking experience but not specifically induced by the pharmacologic activity of LSD.

Dr. Fremont-Smith: Well, I think this is also an arbitrary distinction.

Multitherapist Interviews Utilizing LSD

André Rolo, M.D., Leonard W. Krinsky, PH.D.*, L. Goldfarb, M.D.,** and Harold A. Abramson, M.D.

The following technique was developed as a modification of previously described work. (1) The major purpose was to devise a technique in which previously untapped anxiety-laden areas were probed (most of the patients had been in therapy previously). In addition, it was hoped that these patients could be motivated to continue in their therapeutic relationship following the LSD session.

At the South Oaks Psychiatric Hospital, it has been found that multitherapist interviews are practical and maintain a patient as an active participant in the therapeutic process. The multitherapist approach has been employed in the past, but apparently not under conditions in which the patient was administered LSD as an adjunct to psychotherapy. (2, 3)

Our multitherapist extended interviews begin anywhere from 8:00 to 8:30 A.M. The patient is administered 100 mcg of LSD orally. This is administered with one of the interviewers present. Within 30 to 45 minutes, the remaining two interviewers join the conference.

As the effect of the drug heightens, the patient reacts to the presence of therapists. Differing transference reactions to each therapist are made more manifest. Almost invariably one therapist is selected as a "parent figure" or "protector"; another, as the "enemy," a therapist whom the patient evidently feels safe in attacking. The third therapist is variously identified as contemporary: a teacher, or a professor.

The initial phases of the conference are conducted *vis-à-vis,* with the patient sitting in an undarkened room. Within one to one and one half hours, as the reaction heightens, the patient is encouraged to lie in bed and to associate to the material previously discussed. At that time, the room is darkened.

Some of the patients assume a foetal position. Others seem to enter deeply into an almost hypnotic state of repeating one statement over and over. During this phase of the conference, the orientation of the therapists moves from a more directive to a less directive approach. The patient

* Director, Psychological Services, South Oaks Hospital, Amityville, Long Island.

** Clinical director, South Oaks Hospital.

frequently moves spontaneously into highly traumatic childhood experiences and may hyperventilate or act out certain feelings. None of this acting out interferes with therapist interviews. More success has been encountered with patients who have previously been in analysis with unsuccessful results as contrasted with groups of relatively psychologically unsophisticated patients.

After the patient has entered into a heightened reaction, such a reaction is permitted to continue relatively unabated for one to one and one half hours. On occasion, the reaction is terminated when the patient begins to hyperventilate excessively or begins to show signs of dealing with material that would overcome ego reserves.

Another aspect of the procedure that is considered very important consists of having lunch with the patient as a device for terminating the interview. Associating on such an intimate level with three persons whom the patient also sees more or less as authority figures usually has some beneficial effect. The patient occasionally is able to begin to resolve some distortions as to authority figures. In addition, this period is used to recapitulate some of the findings. The patient continues as an active participant. He often is so involved as to be unable to eat.

Previously described studies utilize the administration of 25 to 400 mcg and more of LSD. Our experience is that very high dosages serve to inhibit rather than enhance the response pattern during psychoanalytically oriented interviews. The usual dosage of 100 mcg is administered orally after breakfast and approximately one hour before the conference is to begin. If there is an insufficient response, an additional 25 to 75 mcg is administered hypodermically. The dose rarely exceeds 200 mcg.

It is our experience that conferences can profitably be terminated from four and one half hours to five hours after beginning. One of the phenothiazines or a barbiturate is given to the patient.

In a multitherapist interview program involving 47 patients over a three-year period, 27 patients continued in intensive therapy (58 percent). Forty of these patients (85 percent) expressed a belief that the interview procedure had been of benefit. Staff opinion was that 30 patients (64 percent) had benefited. Although research is continuing in follow-up studies of these patients, our program has been sharply curtailed due to the government's restriction of the use of LSD.

FRAGMENT OF VERBATIM RECORDING UNDER 150 MCG LSD 25

Data near height of reaction. Patient was lying down.

Dr. A—Dr. Abramson
Dr. K—Dr. Krinsky
Dr. R—Dr. Rolo
Pt. —patient

Pt: I'd be too strong for William. I'd be so too much, I'd be too strong for him. I'd just thrust him aside with this power, sheer power that is. He doesn't exist. I would kill him! He's nothing; he's a weed. Just tear

him aside; he doesn't exist. There's nothing. I destroy everything around me, but with power, sheer power! (short pause) Shadows in the world of ugliness! I would kill! I would kill!

Dr. R: Now I have a question. What are the requirements necessary for you to have intercourse with a woman?

Pt: What are the requirements necessary for me to have intercourse with a woman. Ahuh. (pause)

Dr. R: Is the question clear?

Pt: The question's very clear, Doctor. I'm trying to answer, you know. There's a little interference with that outside radio out there. But it shouldn't really be, should it?

Dr. K: Outside radio?

Pt: The question was? I've lost it. What was the question again?

Dr. R: What were the necessary requirements for you to want to do, actually have intercourse with a woman?

Pt: (after pause) For me to have intercourse with a woman. It's like that telephone, you know, plug, the plug goes in like an outlet. It's all an outlet; it doesn't mean anything. It has no meaning, outlet. Outlets mean nothing. Plug and you plug it in. A woman is a plug-in. I don't want that. That's too small, my world. Something holds me back from going to where I want to go, where I want to go. Maybe I'm afraid to go.

Dr. R: When do you think you'd like to plug?

Pt. Sir?

Dr. R: When do you think you'd like to plug?

Pt: When would I like to plug? Oh, any time.

Dr. R: Any time, you say?

Pt: Any time.

Dr. R: It's not wrong.

Pt: Oh, what're they talking about?

Dr. R: Look, you mentioned that if the most beautiful girl, attractive girl, the best girl would be in the other room, you wouldn't want her. You said also if a woman was married and this woman was attractive, you would want her but you wouldn't do anything with her. So I'm asking: When would you just not want but also go ahead and do? What would be the necessary condition?

Pt: What would be the necessary condition? I don't know. I just don't, can't answer you, Doctor. I can't answer without feelings.

Dr. A: You can't answer it without feelings?

Pt: No, I don't mean it that way. If I can't, how could you put such a thing on a, on a, on a paper basis? When and where and how and why? You can't do it that way at all.

Dr. A: Would you like Dr. Rolo to rephrase his question?

I don't want him to rephrase his question. But, understand that this question is a difficult one he's asking. The question is: what is the circumstance in which you would have relationship with a woman?

Dr. A: Well, under which circumstances wouldn't you be afraid to? Let's put it that way.

Dr. A: What would be the circumstances that would decrease the fears?

Pt: (after short pause) I can't answer you, sir.

Dr. K: How do you want to answer? What do you want to answer? There's a question you do want to answer.

Pt: I don't know what the fears are. Right now I'm in the middle of a great dome, maybe a cathedral, with great carvings on it of the knights. But gentle, beautiful carvings in wood, carvings. It's a very beautiful dome. I'd like to belong to that world. It's a warm world here. It's a warm world. A much better world that I'm in now. Oh, it's a beautiful world. A little more warmth around me, I'd be better off. A little more warmth is what I need. But I'm still in the dome, the knights are in armor for a protective world. Do I have to go into the world of socks? Why can't I live in the world of old? I'd like to live in the world of old, the world of King Arthur. It's a pristine life. The thing is that we want it, we want it, and to belong. You know what it means to belong? To be somebody, to belong to somebody, and to be somebody, to belong to somebody, and to be somebody? If I can only belong, if I can only belong, I don't care to whom or to what or to how, but I want to belong. Please let me belong to somebody. Please let me belong to someone, anybody. I want to be somebody. I want to be somebody. Why don't I? Why don't I? Well, all right. I want to belong to somebody. I want to belong to somebody. Where am I going? I'm getting very small. All right, I know when I'm conscious, and I know what's happening, and I know you're all sitting around me so I know where I am. I'm very small! And I want to belong to somebody! I want to belong to somebody! Let me belong to somebody, please, anybody! I want to belong! Please! Don't go, don't go! Don't go!

Dr. K: But she has to go to the hospital.

Pt: Does it hurt? I don't see anybody. I don't know.

Dr. A: How old are you?

Pt: (after pause) How old am I? Whom are we talking to, to begin with? We haven't established contact with anybody. Are we talking to somebody? I was trying to say "Don't leave me," wasn't I? I said, "Don't leave me. Don't leave me." Where was I? Let's go back into where I was. Where was I? You assume it's my mother, don't you, Dr. Krinsky?

Dr. A: Was it a nurse? And not your mother?

Pt: I don't know who it is or what it is. A circle! I hear a lot of noises outside that break into... Otherwise, I'm starting to be heavy from my neck up. We know what this heavy breathing means, don't we, Doctor? We've learned from the past. I'm starting, now. Who is it? Who is it? My mother, my father? Who is it? Who are you? Who are you? Who are you? Come on and tell me. Come out in the open. Who are you? Who? I'll challenge you, I'll get you. I'll get you, whoever you are. I know it, a gorilla! I'm a gorilla! I'm a gorilla! I'm a gorilla! I'm a gorilla! Let's break it now.

Dr. A: OK. (The patient sat up.)

Pt: I think it doesn't mean anything until I find out who it was, and what happened and where it happened, Doctor. I mean, it's fair enough when you suggest it's my mother. You're probably right.

Dr. A: Well, no, I thought it could be a nurse, too, not necessarily your mother. I've seen infants of sixteen months—

Pt: How far back do you think I was? You asked me; I don't know.

Dr. A: Well, a sixteen-month old child broke out into eczema when the nurse was discharged even though the mother was present. It's the loss of a loved one, you see! And it needn't be the parent! Could you find out from your mother if you were taken care of by a nurse?

Pt: I couldn't find out anything at all.

Dr. K: What does being a gorilla mean to you?

Pt: Gentlemen, we could have gone, we really could have gone, if you wanted to.

Dr. A: You broke it off. You broke it off yourself!

Pt: I did, too.

Dr. R: You didn't want any more.

Pt: No, I could take more.

Dr. R: I say, you didn't want any more. You said, "Let's break it up."

Pt: Well, I was afraid of the gorilla. I was afraid of the gorilla, turning into a gorilla. I didn't want to turn into a gorilla. I was afraid of this. Afraid!

Dr. R: What is the gorilla? Do you remember any recollection of a gorilla?

Pt: Of what a gorilla is?

Dr. R: Whichever you want. What is a gorilla?

Pt: Let's find out. Why don't we go out and find out? What is a gorilla? Let's find out what is a gorilla. Well, they're big and they're very powerful things, gorillas. I could turn into a gorilla very easily. That easy? Dr. Abramson, take a look at my hands. You see what a gorilla is, Dr. Abramson? There's a gorilla for you. This is a perfect picture of a gorilla. And I can become a gorilla. I can become terrible and awful, and I can take my hands like King Kong, yes, and I tear everything like a bat, just like a bat, just like a bat. These hands are the hands of a bat.

Dr. A: Did your mother threaten you with her hands?

Pt: I don't think so, Doctor. I don't think she did. She once (laugh) she once raised her hands, you know, to hit me, so I held her back and she said, "How dare you?" I don't think she threatened me.

Dr. *A:* Did she have claw hands when you were three or four or five?

Pt: 'Course not.

Dr. A: That was a later development.

Pt: This was the sickness that she had. As a matter of fact, in thinking about my childhood, I remember one other part, one other segment of it. In the year before I went to summer camp, as the youngest camper, I went away with my mother to a camp called . I remember the name if it. I'd be four and a half or three and a half. My father, I think, commuted or just spent the weekends there or some-

thing like that. I was up in New York somewhere. And, no problems, though! If I can borrow M—'s words, I would say I was a happy vegetable. Let's find out when I became an unhappy vegetable. What I'm trying to establish is that this would be the time before I went to summer camp. Possibly she was getting sick at this time or she wasn't getting sick, I don't know. I don't know what the reasons for going to a summer camp are to begin with, with your mother, when you live in a home that was suitable. I don't know that either.

Dr. R: At what age did she start to have the claw hands?

Pt: Sir?

Dr. R: How old were you when your mother started to have the —

Pt: I don't know. I only know my mother as this woman, Doctor.

Dr. R: That's your only —

Pt: That's my only recollection of this woman, of my mother.

Dr. R: Always like that. What was bat?

Pt: Sir?

Dr. R: Bat.

Pt: I didn't get that word at all.

Dr. R: BAT.

Pt: B A —

Dr. A: T. Bat.

Pt: Bat. Oh, bat. Bat.

Dr. A: Yes, you mentioned that a few minutes ago.

Pt: I can't... We used to take little bats, I guess, didn't we? Capture them. They frighten things. They come at you at night.

Dr. A: They have claws.

Pt: Sure they have claws. They sure are little things; they have little claws. As a matter of fact, this must have been one of the severest dreams I ever had in my life. A nightmare about a monkey's paw. This was in camp. You remember "The Monkey's Paw." What an end. This was a... we had a chicken paw, with movable fingers. It must have had something to do with the play itself, where they uncover a monkey's paw somewhere or something like that? I don't remember the play.

Dr. R: There was a mystery picture, "The Monkey's Paw," or something like that.

Pt: Do you people remember anything about that? It's a very famous play. I'm sort of surprised that you don't know —

Dr. A: Edgar Allan Poe?

Pt: No, no, no, no, nothing like that. It's either, it's either —

Dr. R: Rape was being committed —

Pt: Maybe it was. I would give you credit for anything, Dr. Rolo. I don't know why. (laughter)

Dr. R: Why doesn't he like me?

Pt: Let's forget about personalities and let's go on and find out —

Dr. A: This isn't personalities. This is —

Pt: It's not important when I can go back and find out things. That's what

I'm trying to say. Can we go back and can we really find out what happened? (The patient was permitted to hear the preceding gorilla sequence.)

Pt: I didn't like it when I turned into that gorilla. Before that I didn't think much of my voice; I didn't think I was a man at all. I thought I was very artificial, even on the tape.

Dr. A: Would it be fair to say that in the reaction you had you were either a frightened child or a gorilla? There was no intermediate step in your reaction? A destructive person with a claw?

Pt: I wasn't that frightened. There's the point. I didn't feel fear at any time. That's what I didn't like about the whole thing, Doctor. If, here I am, a person, trying to say, "Where are you? Where are you going? Where are you going? Don't leave me." And begging. Wasn't I begging?

Dr. A: Wasn't that fear? Isn't that anxiety?

Pt: But I don't feel it.

Dr. R: But you want to belong.

Dr. A: But you did.

Pt: Hah?

Dr. A: Do you mean to say that you could say all of these things without feeling?

Pt: I didn't go through any pains, did I?

Dr. K: You seemed about to cry.

Pt: Well, why don't I feel pains? Why don't I let myself go out and feel these pains and feel what it must have felt to be, not to have somebody. I don't belong!

Dr. A: Well, let's look at this reaction which you had. There were two phases to it. In the first phase you were losing something that made you feel you belonged. In the second phase, when you couldn't solve that problem, you solved the problem by turning into a dangerous animal with claws.

Dr. K: But remember, this was during that heavy breathing period.

Dr. A: Yes, and you can hear the heavy breathing.

Dr. K: You pointed out that we know what the heavy breathing means.

Dr. A: Yes, yes. Dr. Rolo just asked me if it wasn't true that a mother is sometimes called "the old bat." And that is true.

Pt: Yes. I imagine it is true. So is the father; he's an old bat, too.

Dr. A: I didn't know that. Is the father called a bat?

Pt: Well, anybody that you wish.

Dr. A: It's usually a woman, though.

Dr. K: And a gorilla is a pretty sexually aggressive kind. Usually what came out during this heavy breathing. Do you have any feelings about it at all?

Pt: Gentlemen, I think that I could have gone somewhere, that I could have found out. I'm blaming you for not letting me find out but it's me who stopped it. Isn't it?

Dr. K: Would it help if we went back to that and just stopped at that point and let you go?

Pt: You, sir, are three very eminent, competent men here. You make the decisions.

Dr. R: And immediately you develop the claw hands.

Dr. A: And you said, "You know who these hands are?" You said, "When I'm a gorilla, I'm my mother."

Dr. K: Also, there was a "getting even" quality.

Dr. R: And then the bat. So, again, talk about the mother, so it looks like the mother, maybe comparing her to the owl he saw there or the bat he saw in his camp, but still the claw hand —

Pt: I didn't explain that chicken's paw. For some reason we left that, didn't we? Let's go back to that for a second. There was a chicken's paw; I think it had movable fingers with a thread through the, through the part. And they had the play, and this took part in the play. I remember for some reason that night I had it. Either I got it or it was given to me or it was in the normal course of things I should have it. And that night I woke up with that paw just beating me unmercifully. That paw was just getting at me unmercifully. That was one of the strongest nightmares I've ever had. That chicken's paw coming and beating me and getting at me.

Dr. K: Where?

Pt: What do you mean, where? It beat me. It was coming to get me, hit me, claw me, punishing me, hitting me, socking me! It was big! It was no longer a chicken's paw, but a tremendous paw! (pause) I'm that gorilla again, you know, gentlemen. Isn't it wonderful? What is that? Jekyll and Hyde? Jekyll and Hyde, right! Jekyll and Hyde, right! Jekyll and Hyde! That's perfect. That's what I am. These hands, crawling hands! Don't you see these hands? Can't you see them? They're now forming, completely. They're not even going. I don't have any hands any more, they're going, going. This hand is going, is going! This hand is going! No, it isn't going; I've got control. Gentlemen, why am I left-handed. Why am I left-handed? I'm a natural right, (pause)

Dr. A: Were you scared?

Pt: I felt something on my hand, the bedspread. It was the bedspread. I wasn't afraid.

Dr. A: I see. I didn't know why you jumped; but you did feel something in your hand?

Pt: Yes. No, something that touched my hand.

Dr. A: Yes.

Dr. K: As if it were what?

Pt: Let's go back to the hand and see what we can find out about it.

Dr. R: Who is left-handed?

Dr. A: He is.

Dr. R: No, he's right-handed.

Dr. K: No, he writes left-handed.

Pt: Write and eat left-handed, and I do, ah, I used to play tennis left-handed, and I've changed to my right hand.

Dr. R: Because he said, "Now, why am I left-handed when normally I'm right-handed?" That's what he said.

Pt: I'm naturally right-handed. I'm sorry I brought it up; this was occurring in my left hand. But it was diluting it; it was turning it into a perfect claw.

Dr. A: Were you ever told that you would get scleroderma if you didn't do certain things?

Pt: Not that I know of. And suddenly I started to lose my hand. It was, it was involving into itself.

Dr. R: Why am I left-handed when normally I am right-handed?

Pt: This has always been a point o f . . . of contention. Oh, I know I write left-handed and eat left-handed and comb my hair, this, right-handed. I shave left-handed; that's unusual, but I'm, everything else, I'm a right-hand complex, much stronger in the right hand. Baseball or any sport, any athletics. I masturbate with my left hand. Let's find out, if we can. Let's go back. You know, for a second, it's almost like, like, ah, I don't know! I'll try to; I'm sure you've all been through this! Let's hear about you, Doctor, (laughter) I'm afraid to go through it, really! Because, well, nobody wants to feel the injury. Do you? Let's go and see if we can find it. Because, all this time I do have a feeling in my loins. I've said this all along, that there's feeling in my loins. What shall we call on now, gentlemen?

Dr. A: Your last words: "No one likes a feeling of injury," and then you followed that up with a feeling in your loins.

Pt: Did I say nobody likes a feeling of injury? I don't mean that; I mean nobody likes to feel—yes, I do mean that.

Dr. R: The left hand?

Pt: Leave the left hand alone, Doctor. It's withered now; it's not going to hurt anybody anymore. But you see how it's withered? It doesn't mean a thing. It's harmless; it's useless. You know, gentlemen, let me break in right now. My left hand, I don't know why! Let me go, for God's sake. I'm the only one that did the feeling—nobody else. I was going to say that any time on a plane, or a train, my arms fall asleep when I fall asleep. They invariably fall asleep, one of them, my left arm or my right arm. And, you know, I'll wake up. It's very difficult to wake up; only on a plane or a train. Only! And only when I fall asleep on these vehicles, when I'm sitting on an armchair of any type. And it's strange, you know, why this should happen. But anyhow, let's go back to the left hand. I took a lot of pains, Doctor, didn't I? It's very, very withered; it's withered all right, really withered. Not much of a left hand, is it? (short pause)

It's my mother's hand; don't you see that? It's my mother's hand! I can feel it; her fingers, her fingers are there. Not mine; it's hers. My mother's fingers. What am I doing with her fingers? Maybe that's it; it's become my mother. There I go. "Away we go!" as Jackie Gleason

says. There goes my hand! There goes my hand! How's my sense of humor? (pause)

Dr. A: You say you masturbate with your left hand?

Pt: Yes, sir. (pause) This left hand now has the strength of metal, or iron. Did you ever see so much power in your life, Doctor? You haven't seen anything like this? It's a fantastic hand. What power! Oh, what power this hand has! Jesus Christ, what power!

Dr. A: Are you afraid to use that hand, ever?

Pt: No.

Dr. A: If it has that power?

Pt: Tremendously powerful, isn't it? You know, the only hand that I use, though, to imitate my mother! The left hand that I'm using all the time, becomes my mother's hand, it was my mother's hand, I felt it as my mother's hand. A very powerful hand!

Dr. A: You said you masturbated with that hand.

Pt: Yes, I did. Maybe we've been spending too much time on the hand. I don't know.

Dr. R: What about the sensation in the loin?

Dr. A: Did you hear Dr. Rolo?

Pt: I heard him. (pause) This blue's a very pretty shade. Shall we go? Shall we have our orgasm or not? The thing is, before I go, to ask whom I'm having it with. It's not too much to ask, is it? So let's find out who you are. Who are you? I'm looking for somebody, or somebody... and not going to have an orgasm with somebody... I'd like to know who it is. It would be very nice, you know. I mean, this is the only thing in our society; you should be introduced first. I just don't want to have it with nothing.

Dr. A: Are you describing a natural event, or is this a feeling that you've just had?

Pt: No, I was trying, this was — I was stuck in the center. There was nothing; I was nowhere.

Dr. A: Well, you were talking to a woman and you were saying you don't think you should have intercourse with her until you've been introduced.

Pt: You know, it's funny. Isn't this, all this? You know, you're in another world, and yet, you joke. I was joking. You realize it, of course.

Dr. A: Well, I thought you had a rather wry sense of humor about it when you brought in the comedy of our culture, but—

Pt: What I'm trying to say is that I was in the middle of it when I—yet I said, "All right, let's be introduced whoever you are, whoever you may be. You know, in society, this should be."

Dr. K: Could you see her?

Pt: I saw nothing, unfortunately. Let's go and find something.

Dr. R: You said, "Well, masturbation. Should we do it or not?" Now, lets think about it.

Pt: What are you afraid of, Doctor?

Dr. R: Hmm?

Pt: What are you afraid of?

Dr. R: I'm not afraid. I'm asking what you mean by this. Now, should we go into it or not: "Now, gentlemen, seriously,..." That's what you said. What did you mean by that?

Dr. A: While you were speaking, you asked us if you should go more deeply into masturbation. Isn't that it?

Dr. R: "Should I go into it or not? This is serious, gentlemen." That is what you said; I'm quoting you.

Pt: I said, "This is serious?"

Dr. R: Yes. "Should I go into it or not?" You asked permission if you should finish your masturbation or not.

Pt: Well, one reason for that is the last time this occurred, and dramatically it did occur, Dr. Abramson brought me out of what was occurring because of some lack of oxygen or whatever was happening to me, I don't remember.

Dr. A: Yes, you were hyperventilating.

Dr. R: But you were not hyperventilating.

Pt: So I figured I'd ask permission this time to do it. It's like everything in my life; you've got to get permission first before you can do anything. Isn't this true? Isn't that the story of your life?

Dr. R: You said you were independent to the point where you didn't have to ask permission.

Pt: Huh? What did you say, sir?

Dr. R: You have to ask permission for everything you do?

Pt: Do I have to ask permission for everything I do? Yes. You do, you do. Don't you? Do you? This is punishment.

Dr. A: Who used the claw?

Pt: Who used the claw? That—that claw! Who used the claw? What did Dracula look like? Count Dracula. And Frankenstein. I was so scared of him.

Dr. A: Yes. Look, I think you'd better relax a little. I think you've been through enough of this today. All right?

Pt: Chicken?

Dr. A: Yes, I'm chicken, all right. I'm chicken, but without the claw.

Dr. R: You don't ask permission, if you do something which is wrong? Do you want this claw into you? Do you want this to hit you?

Dr. A: Yes. Come on, sit up, because I think you've gone back enough now. Let's try to work with what you've found out. We found out something rather important today.

Pt: No, we didn't find out what happened.

Dr. A: Well, we may not be able to find out what happened for some time—

Dr. R: We didn't find out what happened?

Pt: I guess we did. I'm being facetious right now.

Dr. A; We didn't find out everything that happened. We found out something.

Pt: I'm still—what do you mean? To go back, and—and—Amazing, this claw on this hand, isn't it? Isn't it amazing? Right now, even when I talk to you, I feel it turning into a claw, even the skin whiteness, the knuckles!

Dr. K: The left hand?

Pt: The left hand.

Dr. R: Is your mother left-handed?

Pt: No, she's not. She must eat. She puts the utensils in here and she eats in this way.

Dr. R: And the left hand is the claw hand?

Pt: Yes, it's a claw hand, isn't it?

Dr. R: And your mother?

Pt: My mother? I don't think it makes any difference.

Dr. A: Both of the hands are —

Pt: Oh, both her hands are this way. For some reason I've turned my left hand into my mother's hand. The hand of punishment, though, isn't it?

Dr. K: What do you use that hand for?

Dr. R: Sometimes for punishment?

Dr. K: What else?

Pt: What else do I use it for? As I said, I use it to masturbate. Now, what has this to do with it? Do you want me to try or not?

Dr. A: No, I think you've had enough reaction today. You've been through quite a day again.

Pt: It's going to take a lot more than that. I'm not afraid of it.

Dr. A: Are you telling me that you had so much punishment in the past that this is trivial?

Pt: I think I waited a long time.

Dr. A: Did any of this come up in your works with Dr. X? After all, you've had many years of psychoanalysis.

Pt: I would say that, by and large, it all did, but still it's—as I said—maybe it's the idea that I'm so much of a perfectionist that I can't accept it, unless I know.

Dr. A: Well, did you act out these feelings of being a gorilla?

Pt: Oh, no.

Dr. A: And having your mother's claw hand or anything else?

Pt: No, oh, no, no, no. There were times during the analysis when my hand did turn this way.

Dr. A: Did turn this way, but did you know whose hand it was?

Pt: Yes, I knew whose hand it was then.

Dr. A: Did you tell Dr. X?

Pt: Yes, and he knew, too. He knew, too.

Dr. A: And what conclusions did you reach with him in connection with these events? If you remember.

Pt: Well, they happened at such, such varied times. It's very difficult, you know—it might have been under certain circumstances!

Dr. A: Did you go through this terrible feeling of not belonging with Dr. X?

Pt: No.

Dr. A: And of pleading with this person not to leave you?

Pt: No, no, but I've always known this.

Dr. R: Wanting to destroy the husband of the woman whom you desire or wish?

Pt: Sir?

Dr. R: Wanting to destroy the husbands of the women you desire?

Ft: We've been through that many times with him. I mean, this is nothing, this is, ah, the beginning of, you know, the basis for the —

Dr. R: Did your mother punish you —

Pt: The trouble is, Doctors, it changes—the complexities of it change so many times that, each year, the husband represents this and represents something else, and before you know it, you don't know who he represents.

Dr. R: Whom do you think he represents? The husband you are trying to destroy?

Pt: There's no question to ask me. My father! There's no question about it.

Dr. R: Right, go ahead, ask him. Does your mother punish you often, hit you often?

Pt: She couldn't have, she couldn't have. I don't know whether she threatened or scolded or what. She must have threatened, she must have threatened. She was the type of person that would threaten.

Dr. A: You said you called her "the general" before. Well, if a person is a general, if you don't obey orders—

Pt: Yes. She would threaten, she would threaten.

Dr. A: What did she threaten you with? (pause) It's most unusual to have a son call his mother "the general."

Pt: Well, we'd make such a joke of it that, ah, of course, we'd —

Dr. A: Yes, but it's —

Pt: I don't mean, I mean in the family circle.

Dr. A: Yes, but it's certainly a little unusual to call a woman a general.

Pt: I see what you're trying to drive at.

Dr. A: That's absolute authority. You either do this, or else.

Pt: Well, that was it. There was no question about it.

Dr. A: Yes, but isn't that being threatened constantly?

Pt: Yes.

Dr. A: Was this nightmare of yours, involving a claw, a recurrent nightmare?

Pt: No.

Dr. A: It happened just once?

Pt: Yes.

Dr. A: You're very sure of that?

Pt: Oh, yes.

Dr. A: Do you remember how old you were?

Pt: I wouldn't dare start to say. I was, oh, nine or ten, somewhere along there.

Dr. A: As late as that.

Pt: Maybe earlier. I doubt it.

Dr. R: So, actually, even though he hasn't been hit —

Dr. A: There was the image of the general.

Dr. R: Even though he hasn't actually been hit, here we find out that in his own mind he never ceased to be hit, beaten, clawed, menaced —

Pt: Well, when you look at it now, there's no question that this was my mother's hand, always there; this hand of steel, this hand of iron, this hand of metal —

Dr. R: And it was still being raised all the time.

Pt: It was always there, always there, and I can't lose it.

Dr. R: And symbolically —

Pt: I withered it away, though, didn't I? I did wither it away. So it was helpless. Didn't I say, "Now the hand is helpless?"

Dr. A: Yes.

Pt: Well, maybe I wished she'd lose her hand.

Dr. K: But if she still represents a threat — You go to her house, and she doesn't want you to sit on a chair, you have to get mad.

Pt: I have to get mad?

Dr. K: You do.

Dr. R: And you did sit down in the chairs.

Pt: I could sit down in the chairs.

Dr. R: So you again took the challenge and —

Pt: I accepted the challenge. I don't know if I ever meant to... a challenge —that's the point. I don't know if ever really—if I could have really succumbed.

Dr. R: Yes, but that's what you said before; you always have to ask permission.

Pt: When I was, ah, about, ah, nine years old, I went to prep school, in which everything was rigid. We learned to place my silver this way; that was all there was to it. Everything was done by the book. And we had a woman around the table; you had to stand when she came and you sat when she sat and didn't leave. Her name was Miss H and she was a cruel bitch; but I think I was in love with her. That sounds odd, doesn't it? Maybe that's the woman I was trying to beat all the time.

Dr. A: Well, you were pretty sure of her, weren't you?

Pt: What do you mean by that?

Dr. A: Well, she was predictable.

Pt: Yes. She was predictable. Well, what are you trying to say, sir?

Dr. A: Well, you knew when she'd go away and when she'd be there.

Pt: That's true, or are you trying—? Is this something else here? Or is it—you didn't know what to expect half the time?

Dr. A: You didn't know what to expect from your mother.

Pt: That's what I mean. You could put your hand out and either it would be kissed or cut off. You know what I'm trying to say? It's that—you don't know when to love and when not to love.

Dr. A: But with Miss H you did.

(coffee break at this point)

This patient had several LSD sessions. During the course of one of them the Oedipal conflict in relationship to his mother was portrayed by acting out an incestuous relationship with her. The patient remained in

ambulatory therapy with one of us, who followed many of the clues given in the LSD sessions in an attempt to modify the patient's attitude toward the female genitals. He stated categorically, "the vagina is the dirtiest place in the world." It appeared that in ten years of psychoanalysis previous to his LSD sessions, he had not determined the effect of the following relationship with his mother, which occurred with the mother playing an active seductive role. When the patient's father traveled, the mother insisted that either he or his brother sleep with her. The patient, therefore, often slept with his mother through the early part of adolescence. His mother held him closely in bed with her. The patient recalls how desperate he felt trying to get away from his mother's arms under these circumstances. The patient at first resented the idea that his attitude toward the vagina was connected with his mother's seductive behavior. However, discussions along this line led to the patient's gradually reducing his abnormal feelings about the vagina and accepting the female genitals in a much more normal fashion.

The patient's severe depressions have not recurred and minor depressive episodes are easily relieved by Tofranil. The patient's self-deprecatory feelings persist, however, and at this writing it is planned to use methysergide as an adjunct to further psychotherapy.

SUMMARY

Multitherapist interviews are practical and with the techniques used at South Oaks Psychiatric Hospital, the patient is maintained as an active participant in the therapeutic interaction. The technique is illustrated by a verbatim recording, demonstrating the interaction between the patient and three therapists. In this particular patient, who felt that the vagina is "the dirtiest place in the world," several LSD sessions with subsequent psychotherapy led to a marked change in the patient's attitude toward the female genitals. It is not claimed that the patient was cured of his neurosis, but his attitude toward a heterosexual relationship was markedly improved.

DISCUSSION

Dr. Blair: The thing that comes to mind is the different techniques used. Dr. Rolo stated that the reactions of the patients and their regression to early infantile experiences depended a great deal on what psychotherapy had been done before. The attitude of the therapists is interesting. You will find, I think, that some people using LSD will start straight away, or almost straight away. Some avoid other means of treatment and use only LSD. Then you meet the type of people I've come to work with. I've also met people who were extremely enthusiastic to begin with and have gradually become cooler and cooler in

using it. I think these are the kinds of things we have to think of, and I think we have to try to get things together, and in some way explain our attitudes to those who are very skeptical about LSD.

If you take the question of the psychedelic use of LSD, I think it was Dr. Johnsen who said he used it at once without any previous psychotherapy; others said it was used only after quite some time. Then there is the question of set. It certainly is of the utmost importance, and I think if we are honest we will find that it varies a great deal. Dr. Ling's setting was a clinic with four rooms, a therapist, and a nurse, who is very experienced and a motherly type of person. It's very quiet and very nice. Then we have the situation with more than one therapist, which Dr. Rolo has just put forward. Again we have the question in these settings of verbal communication, almost entirely, but not entirely; occasionally you will find patients in this set-up, without the non-verbal approach, who do get better, and who do not verbalize and do not know why. This was brought out in papers that were read at the International Conference on Psychotherapy. There was more variation to approach there than has been here, I believe. I was astonished at some of the papers. Some people were using group methods in which they had a whole ward together under LSD. There is another thing of the greatest importance, and that is the dosage. Dr. Rolo has just mentioned that he gives 100 mcg. Lots of people give considerably less or more. This is important in the psychedelic use of LSD. The question of the transcendental aspect to the psychedelic sphere is, I think, quite dangerous from the point of view of misrepresentation outside our precincts. These transcendental experiences are really responsible for this. I would say it is questionable. I would say that it is not prevalent at all. What did interest me in particular was when it was outside that. With the alcoholics and the deeply depressed, this is one of the most powerful antidepressants of all. This is something I think of importance, and I think it is questionable as to how much in the psychedelic use is due to real physical effect. We all know that alcoholics and alcoholic addiction have physical aspects. Is this drug actually something which might be predominantly physical in psychedelic effects? Lastly, I think we have to connect the doubtful people with the controls which I think are important. I can't believe you can just abolish the controls, but we have controls of this type which I think are impressive to other people and to ourselves. You get neurotic patients who have been to numerous therapists, analysts, and they don't get better. Then they come to one of us who are using LSD, and thanks to the effect of the drug they do get better.

What does the drug do? Is there any other drug that could possibly do it? I think we know now that there isn't, but what does it do? What is it doing? How are we going to explain? Is it just abreaction? I am thinking of Miss Wicks' paper in which she says LSD is the ideal abreactive agent. I think it does more than that. I think there is one thing of tremendous importance, and that is the breaking of resistance. Patients who have had psychotherapy or psychoanalysis

for some time, as much as eight years, and haven't gotten anywhere, do so with the drug; it does break resistance. I am just making general remarks, because I think there is quite a lot of variation in attitudes; in use of the drug; the dosage; the set. And finally there is just one other point which is of the utmost importance for us all, and that is the set. I will leave that open for discussion.

Dr. Ward: It is unfortunate that Dr. Langner didn't get here from New Mexico. Several years ago I took a page from his book when he suggested that it was valuable to have the spouse of the patient present at the sessions. Mine are all large-dose sessions. I start with 300 mcg and sometimes give 400. But I found that this is a sort of multiple-theory technique, if you will, using the spouse as a therapist, preparing the spouse beforehand. It does indeed do as he said, most of the time, and that is it engenders a closeness which is very unusual between husband and wife. The times I've used it, I think this has occurred, when the two people afterwards have been extremely close and have been able to communicate much better than they had before. There is a certain feeling of trust that has been built up between husband and wife. They were relatively helpless if the wife hadn't taken part or vice versa. Along this line I would like to report one dramatic result. The wife had had LSD before with the husband present. He was now having LSD. It was about an hour and a-half after he had had 400 mcg which corresponds to about the peak. We used music. She was crying in response to something in the music. This man pulled himself out of the peak of the LSD, comforted her, and then went back into the LSD experience. He pulled himself out repeatedly to comfort her. This kind of reaction I think is very impressive, and certainly I think the marriage is happy and has become a lot more meaningful following this experience.

Dr. Baker: I have one comment and two questions. We did psychotherapy years ago with schizophrenics which was quite similar to the work you are doing with LSD. It was extremely effective, but we were unable to continue for obvious reasons. Now the question I have is: does anyone know how long the dolphin of Dr. Lilly sustained his change? And the second question: Miss Wicks made a parallel between delinquents and this dolphin that had been injured. I was wondering if, in the results with LSD, there is any time in which the delinquent might change in relationship just to the therapist who gave the drug, and not to others, similarly to what happened with the dolphin. Have you had any experience with this?

Dr. Fremont-Smith: May I answer for Dr. Lilly, who has had to leave? I have forgotten the number of months during which this dolphin, after one treatment with LSD, had established a relationship with the therapist; this relationship was, however, maintained consistently up to the present time with only this one therapist.

Dr. Kramer: I think it has been pretty well indicated in primates as well as in man that it's the very early relationship with the mother which permits social relationships with other individuals in the social organi-

zation. Certainly the start of a relationship, even with a therapist, is the desired beginning of the kind of bond and interaction which then will make it possible for the individual to relate with other individuals without anxieties or fears, inhibitions, or whatever has prevented that in the past. I think this is the beginning of a process.

Dr. Baker: I was struck by the fact that he did not emphasize that the dolphin was attached to this one person.

Dr. Kramer: We would not know how long an infant dolphin's relationship has to exist before it generalizes on a social level. So we really have to wait to see whether it is possible for this to occur. I really don't think we can say anything significant.

Dr. Fremont-Smith: May I put in that the details of comparisons have gone beyond the limits? The relationship should be theoretically with other dolphins rather than humans.

Miss Wicks: When Dr. Lilly was talking I was thinking of my experience of having spent years in a small office—week after week with people brought in and out from the prison and back to the approved schools—it is just like the fish tank! I go so far, and every time I thought I was getting in, then swish!—back into the corner. This would repeat. The therapist then has to work very, very patiently in establishing a relationship with the immature person.

Dr. Rolo: We have found it helpful to the patient when this situation was created: his relationship with the therapist and his hostility to authority. As a matter of fact, I happened very often to be the one to whom he was hostile, as I happened to be the director of the hospital; I was the one who was keeping him in the hospital! Dr. Abramson, for example, during the interview, was the benevolent scientist, who made the relationship toward people very simple and increased the feeling of equality of the patient toward contemporaries. It seemed to work out all right.

Dr. Hoffer: I want to raise one question. You remember, about a year ago, Dr. Lilly pointed out that the dolphin wouldn't allow you to go closer than twenty feet. Now it allows you to approach within five feet.

Dr. Fremont-Smith: That is correct. So there was some move in that direction.

Dr. Blair: In regard to the presence of a spouse, this is something that is important. I would think the answer would depend on the attitude of the therapist himself when he calls the spouse in to be present. It seems to be the rational thing to do in certain circumstances. I have described a setting which is composed of the therapist, the nurse, the patient, and—if the spouse is present—the spouse. This is done at night. It can be done during the day, but is usually done at night so they can go to work the next day. Now that is the setting. I think that three persons sitting in with the therapist is something new enough to make it clear that the whole thing depends on clinical interpersonal relationships. I think it is a good thing to know that men are men, with certain failures at certain times; this is one thing to do.

Dr. Rolo: I think it is, as Dr. Blair said, a matter of setting. In fact it was

interesting to note that the patient wasn't disturbed by the presence of several therapists. In many cases, however, the patient would insist that the nurse leave the room. Other patients would feel at ease because the presence of the nurse helped relieve anxieties in the presence of several therapists. It is difficult at present to evaluate the data.

Dr. Grof: What is your opinion of our modern approach, in organized terms of participation of male and female elements? Would it be a possible combination?

Dr. Abramson: In the hospital here we were flexible during the course of the treatment. After the patient would say, "I would like the nurse to leave the room," if the patient showed some anxiety we would say, "Would you like to have the nurse back again?" With a female patient we very often insisted on having a nurse present, if acting out would get too vigorous. I feel, on the basis of our experience here, that the constellation that Dr. Rolo described worked with our set and our setting; and our set was extremely flexible and relaxed and accepted by the patient. It wasn't good in some ways. We had to change the setting. An ordinary hospital room was used, and there were outside noises. We didn't employ music, we didn't employ any of the usual ancillary aids. Another factor which I would like to emphasize was that our approach has been called here psycholytic. I prefer to call it psychoanalytic. We used LSD as an adjunct to psychoanalytic therapy. The transference was brought up, and as Dr. Rolo mentioned, acting out, abreaction and regression all were kept at a designed level here to give utilizable insight. It was permissive, but not allowed to become too explosive. The patient was not touched. There was more of the tender loving care in our attitude only. I believe I would start with three therapists of the same sex.

Dr. Ludwig: We have tried in the last eight years to activate every possible situation, and as a rule we prefer to do it separately—that is, one therapist to each patient. Occasionally it may be useful to have the spouse sitting in with the patient. It is interesting that here, as in most conferences, toward the end there is less and less disagreement. It seems even the people who insisted that the LSD treatment is the agent now begin to believe more and more in psychotherapy. All human contact is psychiatry, being good or bad. It seems that in all forms of psychotherapy which seem to be good, everything may be an added advantage.

Dr. Pahnke: I would like to ask a question about a certain setting. From the way you described your technique, I assume the patient knew all three therapists and had already established a rapport with them and knew the time they would come in. I would think if someone strange were to come in as a therapist after the patient already was under LSD, it might be disastrous.

Dr. Abramson: I disagree with Dr. Pahnke if he felt the intrusion of a strange therapist must be disastrous. It isn't disastrous here, because the patient identifies the therapist with the hospital; and the hospital

is a mother figure. As long as the patient knows and is told that a member of the staff of the hospital is there, I feel it is not disastrous and that it is a reasonably sufficient introduction.

Dr. Eisner: I want to speak about introduction of other people. I have had all kinds of people at my sessions. First, in the hospital where we were doing LSD, physicians found it so fascinating that they wanted to sit in at any time. Strange people would come in. With a very heavy dose, and with the person very deeply under the drug, it didn't matter. Now, in the situation using Ritalin, I tell my patients beforehand that research groups will be coming in. From one to fifteen strangers will come in and walk out; there is no problem whatsoever.

Dr. Ketchum: I wonder if it would be valid (particularly in view of Dr. Eisner's last remark) to observe certain sets or settings, which to me include the ground rules and expectations established by the therapist in his preparatory indications to the patient. These must be the right ones, not only from the patient's standpoint but also from the therapist's standpoint; and they must be the ones he believes in and which he operates on.

Mrs. McCririck: There is just one theory that I would like to mention. Is it possible, in a very schizoid personality, for the patient to split apart? And therefore in this type of treatment to keep one therapist as the mother and the other as the bad object, and therefore not choosing the two opponents as the negative and the positive, and working them through with the one.

Dr. Krinsky: I think although the patient did not follow the rule which makes the mother the central figure, our assumption is that the individual person has come quite a way from the time he was born until now. Multiple courses are to be played upon. Consequently, the idea of multiple therapists and multiple transferences is important. The base adaptation has been to bring him back to the good mother, and, in all probability, produces one therapist as the mother, most likely the female. But we feel we did not operate within that framework.

Dr. Levine: I would just like to point out that we come to the point now where the state of the art can be defined as exploratory. I certainly do not think it necessary to characterize it as chaotic, but I think it is exploratory. I also would like to point out that almost all the various techniques being discussed this morning—for instance, multitherapist, etc.—have been tried in psychotherapy without LSD. All these problems we've talked of here have been considered in psychotherapy-type meetings. On this basis I would like to suggest that people interested in LSD do not isolate themselves from the rest of the community of psychiatry and continue to make this a very special and exceptional and magical field. Instead I would urge them to continue to talk with other people who are doing psychotherapy without LSD, or with people using other psychological or psychiatric treatment techniques. I think this way the chances of LSD techniques and their usefulness will be greatly enhanced. If the other direction

is taken, and there is a gathering of forces away from it, and a tendency to try and make this very special and unique, and something that is different from all the rest of psychotherapy, then you will continue to fight the kind of battle that has been going on rather unnecessarily for these past years.

Dr. Fremont-Smith: I think I might mention that people here are using other forms of psychotherapy without LSD, and I think there is a good deal of communication; but you are supporting what I urged earlier—that there be communication. I think there is a wide enough range within the group who are using LSD or have used LSD in terms of all the other forms of psychotherapy they are using. There certainly is no objection and every advantage to communication. I think one of the great weaknesses in psychoanalysis has been the isolation of the individual analyst with his patient, or with very few patients, and with very little time for any other form of communication. I think we are getting away from that, too, and this is advantageous. Dr. Abramson wants me to ask you if you think that every patient in this hospital gets LSD? It is a very small percentage of patients.

Dr. Abramson: I missed part of your discussion, but I understand you were advocating the communication of the LSD group with psychiatrists doing other forms of psychotherapy. Am I right?

Dr. Levine: What I was saying was on communication.

Dr. Abramson: But all of us do all forms of psychotherapy, and we are in constant communication. In this hospital there is not any type of psychotherapy that may not be used.

Dr. Levine: We were just speaking of the field in general.

Dr. Abramson: In the field in general, most of the men using LSD are psychiatrists.

Dr. Rolo: I think, in all forms of medicine, instead of working only as individuals we should try to get acquainted with the work of others and benefit from their experience. Is that not correct?

Dr. Levine: Yes, entirely correct.

Dr. Abramson: Isn't that the purpose of this meeting?

Dr. Fremont-Smith: Dr. Levine, we think you put up a magical straw man, and the magic has been knocked down. I don't remember many people mentioning any magic in their own form of therapy. So I think this is not much of an issue, but we are very glad you brought it up.

Dr. Levine: This is not an issue except that, for example, the question of setting up a society has come up—a separate society for people who are interested in LSD.

Dr. Fremont-Smith: Now we see what the trouble is. There is going to be a society. You are quite right, and we are going to hear about it a little later.

Dr. Levine: What I am trying to say is that making LSD a very special technique, taking it away from general psychiatric practice, leads to less understanding rather than more.

Dr. Fremont-Smith: I will have to answer you on this. Is there a society for group therapy? Is there a society for Pavlovian therapy, etc., etc.? So your protest against new societies will fall on deaf ears.

Dr. Levine: Society for electric shock therapy!

Dr. Fremont-Smith: Surely there is a society for the study of electroencephalograms. This is going to continue; these are the advantages. The only disadvantage is if a society becomes so ingrown that it has no communication with anybody else. I do not think there is much danger of that, but you have raised a point and we are reacting.

Dr. Levine: I would say this. I think the type of society would be very important. We have not gotten into this at all. I think there is a great need for exchange of information. If a society is founded with this in mind, I think this would be very important. I also think, although we have a lot of people at this meeting, it would be interesting to have people, who are knowledgeable, say, in psychotherapy and other areas, to have interviews on LSD. I am not talking about this particular conference, but I think it would be valuable to communicate some of the ideas to them.

Dr. Fremont-Smith: Most societies are formed for this purpose of exchange of ideas.

A Psychotherapist's Debt to LSD

Robert C. Murphy, Jr., M.D.*

I have used LSD in psychotherapy since 1955, and find that I know year by year progressively less, rather than more, about what the drug accomplishes in therapy. I probably should at least state here my "position" about the drug. But my convictions about it have by now become so hazy that I can scarcely do even that.

I use it in treatment much less frequently than I did in the first flush of enthusiasm which followed some extraordinary appearing results with patients chronically resistant to psychotherapy (reported briefly in the transactions of the First Conference). But it appears far less a form of magic to me now than it did at first. I occasionally still offer it to patients, explaining that it may help them in overcoming resistances, and then leave further questions and the final decision largely up to them. But my results with the drug could, by and large, no longer be called particularly exciting. The most it seems to do, and usually within a very few drug sessions, is to help patients decide whether or not they are prepared to undergo the upheaval offered by psychotherapy itself. LSD seems to give an advance taste of this upheaval, the bringing about of which is then generally left as the task of unaided psychotherapy. In general, I have become less and less impressed with the ability of the drug to accomplish anything that psychotherapy cannot.

This decay of enthusiasm is very different from the attitude in which I attended the First Conference. At that time I was standing in awe of what seemed to me a bewildering and almost limitless therapeutic future for the drug (which, incidentally, I greatly preferred to Mescaline, the only other psychedelic substance with which I was familiar). It seemed to me utterly "magic": a substance which could, at last, make all things manifest, from oedipal residues to God.

I have not really turned against that point of view, so much as found that LSD is only one of many avenues to personal transformation, of which psychotherapy now occupies my interest far more than does that drug. But I have LSD originally to thank for much of this interest. My early experiences with the drug, both with myself and with patients, acquainted me more than have any others with the apparently unlimited possibilities which exist for human growth and insight. They resulted, also, in my becoming a "strong" psychotherapist. I use this word not on the scale of

* Waverly, Pennsylvania.

excellence, but to indicate a certain quality of remaining comfortable in the face of any of the threatened losses of control to the brink of which patients sometimes come: suicide, homicide, personality disintegration and chaotic sexuality. Convinced as I am by the LSD experiences that no one ever really becomes "insane"—except, perhaps, during periods of crucial and ultimate abandonment—I encourage and support patients to face these threatening catastrophes and do not protect them from their accompanying panic or despair. I have had no trouble with this approach during these eight years and have, as a result, become deeply involved in (among other things) the problem of office psychotherapy of suicidal emergencies. I am aware that this record may at any time be broken, and it happens that I am at the moment of this writing waiting for a young man whom I sent home three days ago to spend the week-end facing his acute suicidal crisis alone in his room. But as the approach has been reliable thus far, I am coming more and more to trust it.

The psychotherapeutic crisis in that young man is, in intensity and depth, very much like those that regularly occur in the course of LSD therapy. (He arrived, incidentally, at the end of the last paragraph, appearing somewhat exhausted from his struggles, but still bravely cheerful and affectionate in a manner suggesting that he is not yet safely past the point of decision.) Since my "LSD days" I have been finding that there are a great many ways to bring these crises into full fledged form without the aid of drugs. Everyone who is engaged in psychotherapy is looking for the development of such crises. For me, the value of having used LSD so deeply in the past is in my having learned to abandon myself and my patient to them when and however they appear. So far, as I mentioned, I have run into no trouble with these non-drug crises, which frequently have the same force as did the "earthquakes" of LSD therapy.

These crises are brought to the surface by a naturally growing intimacy which dissolves ego boundaries as effectively as can be done chemically. The variety of approaches to this intimacy appears actually to be unlimited. It includes any sort of touching, caressing and holding which is consistent with the innocent character of the relationship, total freedom of bodily position and movement, painting and clay modelling, playing chess, listening to records—any flexibility and freedom of activity which is dictated by the immediate needs of the evolving therapeutic relationship. It includes seeing patients as individuals, as groups, as families and sometimes even as spontaneous patient combinations—in whatever sequences the moment may require for supporting the patient and gaining his commitment. It includes patients with all kinds of disorders, provided the ego controls necessary for keeping scheduled appointments are functioning either in themselves or in a responsible family member.

The context of all this flexibility is that of the therapist's readiness to give freely and unguardedly of himself whenever he sees the opportunity. There seems to be very little that patients and therapists cannot do together or share with each other so long as they are guided by the purposes of psychotherapy alone. This sort of freedom does not obscure, but continually sharpens, the separate roles of patient and therapist, for the more

defenselessly the therapist learns to trust what goes on within both himself and his patient, the more firmly his authority as therapist becomes established. It is the growth of this trust that brings patients ultimately into crises fully as deep, in my experience, as those which can be produced by the psychedelics.

As I have learned to trust these upheavals (it is many years since I have hospitalized a patient, even briefly) I have come also to trust the occasional LSD patient to handle his drug experiences with little or no external safeguards. For eight years I have used the drug in the office only. I got into trouble once doing this. That was five years ago, when the combination of LSD and impossible life circumstances precipitated a patient into a prolonged psychosis. But this disaster issued from a complicated and poorly managed countertransference situation as much as it did from the drug. After I had become convinced that the drug was not itself to blame (this took me about a year; the patient has only just returned to continue treatment after nearly five) I resumed office, and occasionally even unsupervised home, use of LSD without further difficulties of any kind. The discipline involved is simple and casual. Patients are driven to and from what is usually a two hour session, having taken the drug about two hours earlier, and then are re-interviewed a day or two afterward. Dosage is moderate, averaging 150 mcg. Overwhelming abreactions still sometimes occur, with screaming, occasional undressing and other abandonments of control. These respond to interpersonal searching for resolution, so that I have rarely had to extend the time allotted for the session. But their relative infrequency reflects my present preference for the upheavals of psychotherapy, rather than those of LSD.

DISCUSSION

Dr. Abramson: Dr. Murphy, at the first conference you aroused my admiration for your courage, because as far as I know, you were the first physician to report having used LSD in the treatment of children.

Dr. Murphy: Yes.

Dr. Abramson: Has anything untoward happened to those children?

Dr. Murphy: Well, I do not have a recent follow-up. I have a follow-up since the 1959 Conference on the children that I treated, and that has been very good. That's about a five-year follow-up on the children I treated on the west coast. One of them was eight when I treated her with LSD. I had had her in psychotherapy for some time before that. There were not really a great many children, but some of them did quite well. Two of them did very well under LSD and seemed to have benefited by it.

Dr. Abramson: Would you be willing to give us some idea of the dosage which you used with children?

Dr. Murphy: Well, this one patient went quite high; I think it was up to 300 mcg.

Dr. Abramson: How often did the children receive it?

Dr. Murphy: Once a week.

Dr. Abramson: Once a week. How many weeks?

Dr. Murphy: I was using it regularly once a week. Well, it was over twenty sessions. I would think between twenty and thirty.

Dr. Abramson: Has there been anything to indicate that the drug produced any brain damage in these children? After five years?

Dr. Murphy: Certainly I know of nothing whatsoever.

Dr. Abramson: You know why I ask this question?

Dr. Murphy: No, I'm not sure.

Dr. Abramson: Well, certain people in positions of authority, have said that LSD produces brain damage.

Dr. Murphy: Oh, yes.

Dr. Abramson: And I just feel that if there is any chance of brain damage occurring, it would be easily observed in children. You have followed them for many years. Perhaps the absence of brain damage in children would be a factor against these rather prejudiced statements against LSD usage, statements based perhaps on fantasy or a distorted countertransference in the physician, rather than experience.

Dr. Murphy: Well, that almost makes me think that perhaps we ought to get another follow-up. It's almost ten years now. These youngsters would be around eighteen now.

Dr. Abramson: There is one thing I wish you would emphasize if you would. You said you are using less LSD. As I remember, you used a great deal at one time.

Dr. Murphy: Well, I was perhaps over-enthusiastic.

Dr. Abramson: You also mentioned the legal aspects. It's virtually prohibited now for a private physician to use LSD unless his patient buys it on the black market and comes in under the drug. That is, unfortunately, the situation in the United States today. I must say that I have had patients who tell me, "If you won't give me LSD, I'll get it and then come in." Naturally, I disapprove of this. Someone asked —I think it was Dr. Rinkel—if people get LSD. I must say that some of these people had had LSD under suitable medical auspices. They are very intelligent, capable people, and it has helped them so much to find themselves. It has given them a sense of being somebody. They don't take it for addictive purposes, but to have feelings. I should like to emphasize that. It is not for the drug effect, but to make them lose their feeling of inadequacy. Has the legal situation (you mentioned it yourself) come into the picture?

Dr. Murphy: Yes, I think so.

Dr. Abramson: Well, don't you think that should be emphasized?

Dr. Murphy: Well, I'm hoping that it will be discussed here. I hope Dr. Levine, or someone, can tell us something more about it. About a year ago I wrote the FDA to find out about the legal status, and I got back a big sheet of paper. I found it quite confusing, and I figured that the FDA may be somewhat confused as well. I think that I would use it if I thought the patient really needed it, unless I knew there was a really strict law against it. I would like to learn

more about the legal status. It isn't particularly the legal status that is disturbing me. It's that I am already finding ways to get so involved with patients (and this is what I'm interested in) and finding also how deeply involved a therapist can become with a patient, and LSD is really carrying coals to Newcastle—I get more than I want, more than I can manage. This is the main reason why I tend to move away from the use of LSD.

Dr. Kramer: Dr. Murphy may have partially answered the question I wanted to ask, but since you made a point of emphasizing the shift from LSD to the process of psychotherapy itself, I am wondering if you would care to elaborate on what aspects of the psychotherapeutic process you became particularly interested in as a result of the earlier use of LSD that you were engaged in?

Dr. Murphy: Well, I don't know how well I can answer that. I tried to write some things down. I'm interested in finding out how close patient and therapist can come to each other, how intimately they can become involved in a psychotherapeutic relationship. I don't know what else to go on with, maybe that's enough—

Dr. Fremont-Smith: Let me ask—let me interrupt at this point. I wonder whether someone, maybe Dr. Bircher, maybe somebody else if he prefers not to, would give us briefly the actual legal situation for the use of LSD in therapy in the U.S.A.?

Dr. Levine: I'll be happy to tell you what my understanding of it is at this time. It is unfortunate, I think, that we don't have a representative of the Food and Drug Administration here to speak for that organization. I cannot, but I will tell you what my understanding of the situation is. LSD is classed by Food and Drag Administration as an investigational new drug. That is what IND stands for; you have heard about IND numbers before. It is only one of a large number of drugs which are classed as such, and it is handled in the same routine manner that other investigational new drugs are handled. In addition to this designation, it is my understanding that the only legal supplier of LSD at this time is Sandoz Pharmaceuticals. They have set up some requirements of their own in order to prevent or try to prevent the drug from falling into the hands of those who might "abuse" it. The requirements, as I understand them (perhaps Dr. Bircher can correct me or amplify), are as follows: (1) They are willing to supply the drug to people who are working under a National Institute Health grant, or under a contract to one of the governmental agencies; (2) they are willing (and proof of this is required in terms of submitting a grant number) to supply the drug to individuals who are working in Veterans Administration hospitals and have the clearance of the authorities of the Veterans Administration; (3) they are willing to supply the drug to those individuals who have the approval of the Commissioner of Mental Hygiene in the state in which they are working. If any of those conditions is met, it is my understanding that Sandoz Pharmaceuticals will supply the drug. This, to my mind, is the legal status of the drug in the United States today.

Dr. Fremont-Smith: May I ask a question? If a physician has some LSD

in his possession, and treats a patient, is he doing anything illegal?

Dr. Levine: Unless he meets the requirements of the Food and Drug Administration under the investigational new drug provisions, then he is.

Dr. Fremont-Smith: In other words, the law says that a physician may not treat a patient with LSD. I was under the impression that this was not so. I was under the impression that any physician who had access to the drug could treat any patient; the only thing he couldn't do was to report it as research; this would be illegal.

Dr. Levine: No. I believe that the case you stated previously is illegal.

Dr. Fremont-Smith: There is nothing that you said about—Sandoz doesn't make it illegal, and there is nothing—

Dr. Levine: I don't believe that he would be meeting the requirements of the investigational new drug requirements.

Dr. Fremont-Smith: He's not investigating.

Dr. Levine: Well, this drug is classed as an investigational new drug.

Dr. Fremont-Smith: Then it can only be used for investigation?

Dr. Levine: For the purposes that are specified, yes, in that classification. If I could speak on a slightly different point, and I think it is one that is of import and related to this: that is, the statements that Dr. Abramson has made, and the statements that Dr. McGlothlin made earlier about the fact that there are a number of individuals (Dr. McGlothlin seems to think these are in the majority) who are not taking the drug for kicks, but are taking it in the way they would go out and seek some other form of therapy. Is that information, or can that information be documented? For example, Dr. McGlothlin, do you have the documentation of the fact that the vast majority of individuals who have obtained the drug through what now would be classed as illegal means are in fact this sort of people, and have you gotten any information together which would substantiate this? Or is it based on just an impression from a limited area of the country? I think it would be very important to make this knowledge and data available, and to document this sort of thing, because this is the sort of information that is desperately needed.

Dr. Fremont-Smith: Dr. McGlothlin, do you want to answer that—can you?

Dr. McGlothlin: No. My information, of course, is not based on the actual survey. I don't believe that any such survey has taken place. I noticed, in the book Blum wrote recently that he made a similar assessment on the seventy or so people that he interviewed who were using LSD without medical aid. That was a very limited area, and that was the only one, I think, that has been documented, and the rest of my observations have been limited to perhaps a hundred people who I know have taken LSD outside of supervision.

Dr. Rinkel: All I wanted to say is that Dr. Levine has stated the legal situation quite correctly. Nobody, no private psychiatrist has the right to use LSD in his practice. I speak for the state of Massachusetts. There the situation is rather simple. The Commissioner of Mental Health has stated that the private physician shouldn't receive LSD

for his private practice. As far as the Veterans Administration is concerned, Dr. Levine's statement is very correct. Indeed, only recently I was asked by a Veterans Administration hospital near Boston to train a doctor at the Veterans Hospital who wants to use LSD. He was advised to do so by the Administration in Washington. In other words, the restrictions against the open use of LSD in America are widespread and I fully agree.

Dr. Abramson: I don't believe the prescribing or using a drug by a physician is "open use."

Dr. Savage: One has to add that if you have LSD and if you file an investigational plan with the Food and Drug Administration, and if the Food and Drug Administration gives you an IND number, then you as a private practicing psychiatrist can use it legally.

Dr. Fremont-Smith: But you won't get an IND number under those circumstances.

Dr. Savage: How do you know?

Dr. Fremont-Smith: It has been tried.

Dr. Abramson: I've gotten an IND number which was finally withdrawn because I could not provide commercial data. That is I could not provide data filed in Washington by Sandoz.

Just one more point, Dr. Levine. I had several talks with Washington, with certain people in Washington, and they said that while it could be held that a physician who had LSD could not use it without an IND number, though the LSD was not transported across a state line, any physician in his office can use any drug he wants to on his responsibility, and it would be very difficult to say that he was breaking the law. Have you heard that at all?

Dr. Levine: No, my guess would be that it would have to come to trial, probably, and be established in a court of law. Usually there does have to be a test case to actually establish something. But I think there is another point here, and I don't think that anyone would want to operate in this fashion to find a loophole to use the drug. I think that there are enough avenues open to use the drug in a legal way and to collect the kind of information that we need, to let us know what are the better ways of using the drug.

Dr. Abramson: I disagree. It took me approximately eight months to find the avenues, corresponding with Sandoz, and about one year corresponding with Food and Drug, and there are still two registered letters unanswered after another year; and finally withdrawal of my IND number for the technical commercial reasons stated. There may be pathways, but there are bunkers, traps, all sorts of things in the way.

Dr. Fremont-Smith: May I ask Dr. Bircher if he would like to comment on this?

Dr. Bircher: I would like to emphasize that this problem is a two-way street, and it is not always simple for us at Sandoz. I would like to emphasize that whoever wants to have LSD or Psilocybin may find legal channels. But you have not emphasized one very important part. We have to register them on a 1573, which a doctor has to fill

out, with the Food and Drug Administration. You have to describe in detail the whole plan of your study. The FDA can come to us at any time and check out the 1573 in regard to LSD and Psilocybin. The FDA has the right to go back to the doctor and check the actual records. I would like to emphasize another thing: when it comes to insurance, I think your malpractice insurance, if something should go wrong, would never cover it.

Dr. Hoffer: In Canada the drug regulations are a bit different. The act states that LSD cannot be sold or transported. If I happened to have it in my office, I could use it as much as I like; there is no restriction on the doctor using any drug he wishes to use. There are only restrictions on selling it or transporting it. The way to use LSD in Canada is very mysterious. I don't know yet how you go about it. You send a letter to Sandoz and say, "Please send us 100 ampules," and they send back an application form. We complete it and send it back to Sandoz and they send it to the Minister of Health, who does certain things to it completely by faith or by supposition, and if he stamps his approval on it, it goes back to Sandoz and they ship us the supplies for which we pay. In other words, it is sold as a commercial compound in Canada. We, in Saskatchewan, those who have been using it, are on the Minister's list (again I can't tell you why, but we are on that list) so therefore we are able to use it. But then every order we place goes through the same procedure, and there is a reward for placing large orders rather than small, and since we all are thinking that it may be cut off, we tend to order more than we need.

Indications for Psycholytic Treatment with Different Types of Patients

Gordon H. Johnsen, M.D. *

We have been working at *Modum Bads Nervesanatorium* in Norway with psycholytic treatment using LSD 25, Psilocybin and CZ 74 for almost four years. About 200 patients have undergone approximately 1500 treatments. Our reason for beginning this program was the challenge presented by many patients who resisted all other forms of treatment. Arendsen Hein has excellently described the challenge in constantly searching for new methods to help these patients. Compulsive neurotics, sexual perversions, character neuroses and psychopathic disorders as a whole are particular problems. By degrees we have arrived at the following indications and methods of treatment.

1. Exploratory Uses of the Medicaments

After a complete clinical and psychological examination, we use the medicament sometimes if we are in doubt as to the diagnosis, and sometimes if we are in doubt as to the therapy. We consider that one or two treatments will very often give us data to help decide whether the pathological picture is determined by an endogenous disorder either conditioned by hereditary factors, or so rooted in the character structure that we can scarcely expect to solve it by therapy through prolonged analytic treatment. An examination with LSD or Psilocybin can reveal whether homosexuality is a so-called "genuine" disorder, for which therapy must aim at adapting the patient's attitude towards his disorder; or whether it is to be perceived as a psychogenically built up anomaly, which we believe prolonged deep analysis can change.

We have found with sexual perverts that one or two exploratory treatments provide definite data and clear indication for diagnosis and therapy. If, during the first treatment, a transvestite only experiences the full well-being of being a woman, has the experience of himself being a woman, with absolutely no regressive or childhood experiences coming to the fore, but has only the feeling of "having found himself," we are hardly

* Chief Psychiatrist, *Modum Bads Nervesanatorium,* Vikersund, Norway.

inclined to believe that it is due to psychogenic factors. The treatment will then consist of helping the patient to bear his cross. Hormone treatment may be included to help him to adapt to the situation. Or we might consider an operation for his sexual perversion. If the transvestism is psychogenic, our experience is that earlier trauma come to the fore, and that the dynamism under an LSD treatment has quite another character, giving us a clue to the process of the future therapy. Such a patient must have quite another course of therapy from the first mentioned patient. We find that LSD is also of help in cases of depression, giving us a clue to which cases can be given analytic therapy and which cannot.

2. Analysis

The next indication for LSD treatment is its use as an auxiliary in deep analysis. In our experience, it gives intensity and concentration to the analysis, elucidates symbols, activates very intense unconscious material, and clears up psychic defense mechanisms in a way which facilitates analysis. The drugs provide real insight and emotional re-experience regarding repressed conflict material and ill-adapted neurotic behavior. The treatment creates a strong, intense relationship between doctor and patient and through its cosmic experiences, in conjunction with the treatment gives a feeling of being able to make progress and to utilize the insight gained.

3. Terminating Therapy

The third indication for using these medicaments is at the conclusion of a normal dream analysis or deep analytic treatment. Then we sometimes give only one or two treatments to bring about the feeling of being able to integrate and utilize the emotional insight acquired through a prolonged treatment. We have found these single treatments very useful at the conclusion of a course of deep analysis.

4. Alcoholism; Drug Addiction; Psychopaths

The fourth indication for treatment is first and foremost with alcoholics, drug addicts and psychopaths, when we try to alter their attitudes. They are often opposed to treatment. They often have tried many treatments without any effect and, understandably, have little confidence in medical help. With these patients we immediately administer large doses. We find that as early as the first treatment, a complete breakdown of resistance may occur and that the large cosmic experiences give them quite a different attitude toward their illness and the possibilities which medical help can offer.

With compulsive neurotics we have found it necessary to employ many treatments. With psychopaths, alcoholics and drug addicts we thought it advisable to employ fewer treatments. During the four years we have used the medicaments, our average number of treatments has gone down from 9-10 per patient in 1962 to 3-4 per patient in 1964. Fewer treatments have been found to be more effective, but with a

stronger and more intense utilization of each treatment. Group treatment was attempted the first year, but has been abandoned. We now employ individual treatment only.

After four years of treatment, we can state that there is a clear difference in the experiences of patients, and that the difference is conditioned by their pathological picture. We can put forward three different types of experiences under LSD treatment: (1.) Regressive experiences. (2.) Existential experiences. (3.) Cosmic experiences.

Regressive experiences are first and foremost to be found in the cases of narcissists, Oedipal neurotics, psychoinfantile anxiety neurotics, and compulsive neurotics. In our opinion, these experiences almost never occur in the case of the strongest character neurotics and psychopaths. Alcoholics and drug addicts always have cosmic experiences. Compulsive neurotics practically always have regressive experiences. Actual neurotics have existential experiences. We consider that it is necessary to be clear about the different experience-types connected with definite pathological pictures. These distinctions give us data for building a course of therapy for the different forms of neuroses. A patient who manages during the primary treatments to express regressive experiences by symbols, by recalling earlier childhood trauma, by the elucidation of the Oedipal situations, by pictures of the narcissistic attitude will require many more therapeutic courses between treatments, with time and maturing in therapy. Existential experiences call for a much more active approach with definitely aimed therapy. Cosmic experiences are especially useful because they give the doctor an opportunity to plan a therapy which reveals character and adaptive behavior.

Does the introduction of hallucinogenic drugs in psychiatry mean basic progress? During the first two years of our work with these compounds, we were in doubt of their value. By degrees, as we gained more experience with the clear indications for planning therapy, we tried to find the different experience-types by means of these medicaments. We now consider that they give us therapeutic possibilities in areas where we were formerly powerless. In fact these drugs are of such great importance in our psychiatric instrumentarium that we can hardly think of doing without them. Indeed, this is a great step forward in psychiatry.

DISCUSSION

Dr. Rinkel: Have you ever had a chance to treat those who use black market LSD over a long period of time? Would you recommend LSD treatment for such a case?

Dr. Johnsen: We don't have a black market in Norway.

Dr. Rinkel: If you had, could you recommend LSD treatment for such a case?

Dr. Johnsen: I couldn't say anything about that because I don't know.

Dr. Rinkel: Could anybody?

Dr. Eisner: Since we are very close to Venice where there's a great deal of black market activity, and to San Francisco where I have a number of patients, I've seen quite a few of these people. The treatment depends on what shape they are in or what the problem is. One patient that I saw was multiply addicted; she was taking everything you can imagine, including heroin. Nothing would work. One girl came to my office on the verge of suicide following several black market experiences. I think she had been precipitated into a suicidal depression by the person she was with the last time she took LSD. In this case it was a question of dealing with the suicidal depression. The patient's ego boundaries were too loose to allow the use of LSD at that time, but it might have been helpful later on. I have several patients who have had bad experiences with unauthorized LSD. I try to take patients such as these off all drugs. After they stabilize enough to see what's necessary, I give them LSD to take them through a proper LSD experience. I don't have LSD at the moment, but we can come close to the same thing with Ritalin in our research group.

Dr. Arendsen Hein: May I ask Dr. Johnsen two questions? The first question is: why did you arrange the post-session group therapy? I assume that you did. You did not use the group session on the same day as LSD treatment. In my experience I find that most patients find it helpful to bridge the gap to reality again; after the LSD experience they have some difficulty in adapting to normal life situations. The second question was that I understand that with chronic alcoholics you start off with three weeks' preparation of the patient and then give the one big dose because this prepares the patient for follow-up psychotherapy. So your policy is to aim for the highest level of experiences in the psychedelic experience, not at the end of treatment, but at the beginning of the treatment period, making use more of the matter of susceptibility of the patient.

Dr. Johnsen: The last question first: we think that the most important thing with alcoholics is to change their attitudes. They have tried almost everything before I see them. They are very skeptical, perhaps negative. We think that after one treatment they change their attitudes completely; they get strength and courage from the experience. They become much more positive to treatment, and then we can go on with our usual treatment. They get more honest, and they say that they understand that they have to take the treatment seriously and in a different way than they have done before. And the first question: I can't really answer why. We thought that perhaps we were not like the Germans who could be so disciplined in groups. They are willing to expose themselves much more than the Norwegian people are. Perhaps it is my own problem, but it was the same with the other doctors in our hospital, too. Perhaps it was also because it takes lots of time. We had them in treatment in the clinic from eight in the morning until two o'clock and then in group therapy from three to five, and then in individual therapy in the evening. We couldn't keep up this speed.

Dr. Osmond: I think Dr. Johnsen has made a very good point here about this change in attitude in alcoholics. We've done two fairly large experiments with this, and we are now in the middle of one. When we stopped the second one, which involved about sixty people altogether, the unit kept asking us when we were going to start again. When they kept on asking, we asked them why. They said the alcoholics had changed their attitudes so much that it was good even for those who didn't have LSD. Alcoholics are often very capable. They use a lot of their energies in trying to frustrate and annoy their therapists. To get that cooperation in this way, even when one's efforts don't always succeed, is remarkable. This effect lasts a very long time. They go on trying afterwards, even though they may fail. It is a great deal better than their previous efforts. Many of these people have been drinking for twenty to fifty years. This in itself would make LSD a valuable tool which we ought to know how to use. If we don't always use it—well—it's because we're still a bit ignorant.

Dr. Mogar: I wanted to ask Dr. Johnsen, first, if he found any relationship between the occurrence of the transcendental or cosmic experience and permanent benefit. And, secondly, how he determined whether or not such an experience took place.

Dr. *Johnsen:* You mean with the alcoholics? We very seldom get the transcendental and cosmic experience with neurotics; we try to avoid it because we think that in an analytic treatment, or in analytically oriented treatment, cosmic experiences take them away from working with the problems of their neurosis; that's our experience. With the alcoholic it's quite different; we don't know why. We haven't compiled our statistics. We will wait; we have made a five year schedule. We will wait two years and then make up our statistics. That is our plan now.

Dr. *Levine:* Dr. Johnsen, could you explain to us the difference in drug dosage between alcoholics and the addicts? Is this based on some idea that the drug is metabolized differently? Or does it have to do with the difference in therapy structure between alcoholics and addicts? I assume you mean narcotic addict patients.

Dr. *Johnsen:* I think that it's the experience everywhere that when drugs are used for a long time, drug addicts have to have much larger doses. I know several places that give up to fifteen hundred mcg.

Dr. *Levine:* Do you think this is on the basis of enzyme production or for physiological reasons? Or do you think that it's the drug experience? In order to have the same intensity of experience are the personality differences important?

Dr. *Johnsen:* I couldn't tell.

Dr. *Levine:* You don't have any feelings on it?

Dr. *Fremont-Smith:* May I just say that the question you raise there is infinitely complex. It is just about as complex as the central nervous system itself is, and in addition as human beings are. Therefore this differentiation as to whether we're dealing with the personality problem, or pharmacological effects upon a personality problem, or pharmacological effects upon parts of the central nervous system

which are not primarily related to personality problems, is something which, I think, we have the next twenty-five to four hundred years to work on.

Dr. Baker: Well, I'm sure I can say that I've had the same clinical experience as Dr. Johnsen on drugs.

Dr. Blair: Dr. Johnsen, I just wanted to ask you to enlarge a little bit on the use of LSD or the other drugs in the investigation, from the point of view of prognosis in your determination of whether you're going to treat them or not. You stated in the beginning that you used the drugs for investigation before you decided whether you were going to treat the patients or not. Could you enlarge on that?

Dr. Johnsen: If we get sexual perverts, for example, we may question what kind of treatment to give them; we want to find out a little more about them. We could use three or four weeks finding out, but we shorten that and say we will try if we can find out more with one or two LSD sessions. We use small doses then. We find that the symptoms are clearer; they are willing to speak more openly to us; we can get a clearer picture of the diagnosis. We have used it in that way to save time.

Dr. Freedman: I think we've come close to an explanation as to why the alcoholic might be treated differently from the neurotic. Could you expand on this? Could you formulate why the alcoholic needs the cosmic experience? What is there about the way he treats life; why does he need it in this way? Have you some way of expressing it?

Dr. Johnsen: Well, I don't know if it is right, but my theory is that neurotics have a much more introspective personality, and the alcoholics are more extrovert and out-projecting. I don't know if that is right, but that is my theory.

Dr. Hoffer: Dr. Johnsen, what proportion of your alcoholics do have the cosmic experience with LSD alone or with LSD combined with the other drugs that you use?

Dr. Johnsen: I don't think we have given any alcoholics only LSD.

Dr. Hoffer: What proportion do have the cosmic experience? Do they all have it?

Dr. Johnsen: Yes, all of them.

Dr. Osmond: Regarding this point that Dr. Johnsen makes so well about the lack of introspection among alcoholics, I think it is not simply that there is not much of it; it is unbelievably little. So much so that people, particularly in our disciplines, who spend a lot of time peering into themselves and wondering anxiously whether they're doing something or other, get a surprise with alcoholics. One gentleman told me the other day, in a revealing statement, that "self-respect is what other people think of you." Another raised this interesting point. I asked him, "How often do you think about yourself?" Eventually we got it down to one minute a week. So I said, "What would you think of some one you met one minute a week?" And he said, "Well, of course, I wouldn't see too much of him." And I said, "How much do you see of yourself?" And he said, "About that amount." This comes

up repeatedly; it is incredible! If you work out its sociological consequences, which are discussed slightly in our paper here, the effect is worth pondering. Our sociological consultant, Frances Cheek, says it is almost impossible to work out a Parsonian model on the assumption that all of the experiential "I" is derived from other people. It means a revising of this model. I think it's theoretically most important. It suggests that we in psychiatry and psychology are about the last on the list in appreciating the strangeness of the alcoholic's extraordinary world.

Dr. Fremont-Smith: You mean some of the alcoholics. We must not fall into this talk about neurotics and psychotics and alcoholics instead of persons who are suffering from alcoholism, neuroticism, etc.

Dr. Servadio: Dr. Johnsen has pointed out some particular difficulties in treating obsessionals with LSD. I think that many investigators have met the same difficulty. I wonder if he has found any difference, using psilocybin with obsessionals. In my very limited experience, I think that I've been able to see that, with obsessionals particularly, psilocybin is a preferable drug because its effect mobilizes feelings, so to speak; it makes these people *feel.* This is what obsessionals mainly lack.

Dr. Johnsen: I'm glad that you said this because the doctor who works with me always has the obsessional patients. He said, "I would rather have psilocybin with my patients." I hadn't thought about it before you mentioned it, but of course that is it.

Dr. Godfrey: In answer to the question of the need for transcendental experiences in alcoholics, we have found in our experience with around 130 alcoholics that it seems that these people have divorced themselves from the rest of humanity. They must have an experience like this to be able to again come into, and react with, the rest of us humans.

Dr. Fremont-Smith: Do you put them all in one basket?

Dr. Godfrey: You can't put them all in one basket any more than you can diagnose psychic experience.

Dr. Pahnke: Others have reported that cosmic experiences are possible, not only possible, but helpful, too, in neurotic patients. You indicate the opposite. I wonder if it may be when this experience is attempted in the course of therapy at a low dosage level. Some have reported that after a person has had perhaps twenty LSD treatments at a low dose, it is much harder to break through to the cosmic experience. And the second question is: could you share with us your method of inducing the cosmic experience in the alcoholics? Do you have any special techniques?

Dr. Johnsen: We don't have any special techniques. We give two to four hundred mcg. We don't prepare as some do, with music, etc. I didn't intend to say that we can't get cosmic experiences with neurotics.

Dr. Pahnke: You said that it was not a help to you, though.

Dr. Johnsen: No. I said that with some neurotic patients the cosmic ex-

periences are really contraindicated. They get away from working with their real problems.

Dr. Arendsen Hein: In connection with your remark that the psychedelic experience with one large dose is indicated more for people who have little or no introspective capacity, we are all aware that there are many neurotic people who similarly lack introspective powers. Would that not indicate that in this, in such a case, the large dose would be indicated in the beginning of treatment as well? This would make the patient more mindful, more interested in his internal conflicts. My experience with psychopaths is similar; these people always have very little awareness of their inner conflicts, and are acting out all the time. When they have had some LSD experiences, they become aware of the inner conflicts.

IV

PSYCHEDELIC THERAPY, WITH SPECIAL REFERENCE TO ALCOHOLISM

A Program for the Treatment of Alcoholism: LSD, Malvaria and Nicotinic Acid

Abram Hoffer, M.D.*

INTRODUCTION

In 1952, Dr. H. Osmond and I initiated a series of studies of model psychoses and schizophrenia. These led directly to our interest in lysergic acid diethylamide (LSD) for treating alcoholics. It is believed by Alcoholics Anonymous (A.A.) that many alcoholics can not recover until they have hit bottom. Hitting bottom has not been defined nor will there ever be a universal definition, for it is a personal event in the life of each alcoholic. It may vary from being told "you are an alcoholic" to a state of total degradation. For some, *delirium tremens,* when fully remembered, has been the bottom.

In 1953, Humphry Osmond and I were invited to Ottawa by the Department of National Health and Welfare to test a new substance which, it was claimed, had cured a remarkable number of schizophrenic patients. As a result we later directed the first double-blind clinical controlled experiment in Canada at two hospitals. We arrived in Ottawa very late at night. The many hours of turbulent flight in a noisy plane left us very tired, and when we could not sleep we let our fancy run over some of the difficult problems facing psychiatry.

While discussing LSD reaction and its similarity to *delirium tremens* it occurred to us that LSD might be used for giving alcoholics controlled *delirium tremens,* or giving them the "hitting bottom" experience with complete safety. In 1953, the mortality associated with *delirium tremens* ran as high as 10 percent. We thought that this controlled LSD delirium might give our patients the experience of hitting bottom.

This idea, at 4:00 A.M., seemed so bizarre that we laughed uproariously. But when our laughter subsided, the question seemed less comical and we formed our hypothesis or question: would a controlled LSD-produced delirium help alcoholics stay sober?

We were, of course, well aware of the difficulties, both theoretical and practical. Some of these were: (1) that many alcoholics had experienced *delirium tremens* repeatedly; (2) the LSD experience modelled delirium but could not produce the identical condition; (3) many physicians would see only the crazy part of our idea and not its potential value. On closer

* Director Psychiatric Research Department of Public Health, Psychiatric Services Branch; University Hospital, Saskatoon, Saskatchewan.

examination it was evident that these objections were not sufficiently well based to dissuade us. Many alcoholics do suffer delirium repeatedly but these are random events in the drinking history of any alcoholic and do not occur at times when the experience can be directed or controlled. *Delirium tremens* comes to an alcoholic at the end of a period of continuous or interrupted bouts of drinking, when the patient is physically ill, usually suffering from malnutrition (including avitaminosis from nicotinic acid deficiency), and is toxic from poisoning with alcohol. In addition he is physiologically tense and flooded with his own noradrenaline, and adrenaline. He may also be liberally dosed with sedatives, anti-tension compounds and tranquilizers. As a result, his delirium occurs when he is in a fluctuating state of consciousness; and when he recovers, he may not remember most of the experience. Finally, *delirium tremens* occurs at the wrong time and in the wrong place. What is quite surprising is that many alcoholics do consider their *delirium tremens* the "hitting bottom" from which they rehabilitate themselves successfully. The co-founder of A.A., Mr. Bill W., experienced his transcendental state or peak experience (see Maslow 1959) after a prolonged drinking session followed by delirium and recovery.

With LSD therapy it would be possible to use a place and time most suitable for a proper experience. Of course none of the factors present when *delirium tremens* occurred would be present.

The objection that the LSD experience did not produce *delirium tremens* was not a real objection. We did not wish to produce actual *delirium tremens* and the model, therefore, was good enough.

We later learned that we had not been very original, and had merely hit upon a solution to alcoholism already developed by the Native American Church of North America (Slotkin 1956). American Indian members of this church had used mescaline and other alkaloids in this way. They believed it took away the desire for strong drink and claimed hundreds of drunkards had been "dragged from their downward way."

LSD, MALVARIA AND NICOTINIC ACID

Our first two alcoholics were given 200 mcg of LSD as a treatment in 1953, at the Saskatchewan Hospital at Weyburn. One, a male patient, remained sober for several months after discharge. The other, a female, continued to drink for six months with the same intensity evidenced before certification. As she reported many years later, she then stopped drinking since she no longer got the same kick out of it. As far as we know, she has remained sober. Later we became aware that Benedetti (1951) had given 100 mcg to an alcoholic who had a marked emotional reaction and apparently was much benefited. These results were sufficiently encouraging for larger clinical trials to begin.

This project was turned over to Dr. C. Smith who had recently joined our research group. At that time, it was impossible to conduct double-blind studies because of the dramatic nature of the experience. It would have been a trivial procedure to use placebo since both subject and

therapist with any experience with LSD would know the difference. An attempt was made to compensate for this by selecting the most difficult alcoholics available, those who already had failed to respond to other treatments and who, in the opinion of their own therapists, had a very bad prognosis.

From the beginning, LSD was not considered a chemical which by itself could produce a major change in the alcoholic. It was always looked upon as an essential factor in an over-all treatment program in which other important therapeutic variables were vital.

In 1958 Dr. Smith released the first report. A series of 24 of the most difficult alcoholics we could obtain were treated and followed from two months to three years (mean, one year). All but four had tried and failed A.A. Eight had experienced *delirium tremens* at least once. Only two cases had not suffered complications of alcoholism. The diagnoses were: psychopathy, 12 cases; character disorder, eight; borderline or actual psychoses, four. The average period of uncontrolled drinking was 12.1 years. Smith described the treatment as follows:

> In the present study, an attempt was made to enter into a psychotherapeutic relationship with the patient and to delineate the main problems. This phase lasted two to four weeks. As might be expected, the building up of adequate rapport was of critical importance during this period and on it largely depended the success or failure of the next phase. Next the patients were given a single dose of LSD or mescaline orally while in hospital. Early in the study, it was noted that alcoholics tend to be resistant to these drugs and doses of 200 to 400 mcg of LSD or 0.5 G. of mescaline were used. A prolonged interview was carried out with the patient, who was never left alone while under the influence of the drug. In addition to discussing with the patient problems leading to and arising out of his drinking, strong suggestions were made to the effect that he discontinue the use of alcohol. No attempt was made to arouse fear. The material which emerged was discussed during the next few days and the patient was discharged. In some cases, follow-up psychotherapy was possible; in most, however, further contact was made through A.A., which provided much valuable and objective information. Dissulfiram was not employed in the study, nor were tranquilizers.
>
> The results of treatment were evaluated as follows:
>
> *Much improved:* Completely abstinent since treatment or drinking only very small quantities.
>
> *Improved:* Definite reduction in alcohol intake.
>
> *Unchanged.*

None of the patients could have grown worse and, of course, none did. The results of this treatment are given in Table 1.

Since this was an exploratory study, criteria for selecting patients for treatment were not known. Four psychotic, or near psychotic patients, Were given LSD. Of these none was improved significantly. As a result of this study, these diagnostic categories were not included for LSD treatment thereafter, unless they had first been treated for and recovered from

TABLE 1

Results of Treatment with LSD

Group	Number	Much Improved	Improved	No Change
Character disorder	8	4	3	1
Psychopathy	12	2	2	8
Borderline and actual psychosis	4	0	1	3
Total	24	6	6	12

their psychoses. Excluding these four patients would improve our results since 11 out of 20 could then be classed as improved or much improved. The development of the mauve factor test (Irwin 1961), (Hoffer and Osmond 1961), and our clinical description of malvaria (Hoffer and Osmond 1962, 1963), has simplified the task. Our rule now is not to give LSD treatment to alcoholic malvariacs unless they have previously been treated with nicotinic acid or nicotinamide and have become non-malvariac; or to those in whom this treatment could begin immediately after having received LSD.

We have shown (Hoffer and Osmond 1963) that alcoholic malvariacs treated with either nicotinic acid or nicotinamide at a dose of 3 gm per day, are able, as a rule, to remain sober for as long as they take the medication regularly.

Smith reported that, contrary to expectations, patients with definite evidence of liver damage did not react in any way differently from patients with no evidence of liver damage. Our earlier reluctance to give LSD to patients with liver damage had been based on reports by Fischer, Georgi and Weber (1951). In addition, Smith could not confirm the observation of Mayer-Gross, McAdam, and Walker (1952) that elevation of blood glucose over 200 mg percent would ameliorate the LSD reaction. One of the alcoholics was a diabetic. At the height of his experience he was given 100 gm of glucose. His blood sugar level reached 278 mg percent, but no observable psychological change occurred. Smith in his discussion concluded:

> In general, those patients who had an intense reaction did better than those having a mild one, but this statement requires some qualification. In cases where severe anxiety was aroused and communication blocked, the result was seldom good. Cases 4, 16 and 17 were of this type. No attempt was made to produce fear during the interviews; instead, an attempt was made to promote a more vivid awareness of interpersonal difficulties and their bases.

The attitude of the therapist is another important variable in the treatment. This method, as described, probably lends itself best to a technique of exhortation, persuasion and suggestion which may not come easily to all therapists (as it certainly did not to me). It must be admitted, however, that therapies which avoid these techniques and concentrate on providing insight have not been brilliantly successful in alcoholism. Moreover, many of these patients did, in fact, seem to gain an enhanced self-

understanding as a result of the experience and this appeared to influence their subsequent behavior.

I believe that contact between the therapist and the patient can be improved if the therapist has taken the drug himself. Unfortunately, I did not do this until the present series was completed. Since then, I believe that my capacity to empathize with these patients has been much enhanced. In view of the refractory nature of the group, the results appear sufficiently encouraging to merit more extensive and, preferably, controlled trials. Modifications of the technique might also produce improvements: giving the subjects some alcohol during the experience or using small dosages of the drugs as an adjunct to psychotherapy, for example.

A final observation of some interest is the fact that the group tended to be remarkably resistant to these drugs. In normal subjects, 100 mcg of LSD is sufficient to provoke a profound reaction in 80 percent of cases, 200 mcg in almost all cases; in these patients, 200 to 400 mcg of LSD were used to obtain comparable results.

During the years 1957 and 1958 we were in contact with A. Hubbard who, under the medical supervision of several psychiatrists and physicians, had developed a method of using LSD which seemed to be particularly effective in producing changes for the better in alcoholics. Dr. H. Osmond personally examined many of the alcoholics treated in Vancouver and heard from them an account both of their alcoholism and of their response to the LSD therapy. There was no doubt that a large proportion of the group had remained sober since their LSD treatment and they ascribed this to having had an LSD experience with the help of Hubbard. In order to test his claims it was important to duplicate exactly his method on a newer series of alcoholics. Hubbard was invited to spend two weeks with us in Saskatoon and to demonstrate to us the details of his method. Three of our most difficult alcoholics were selected and after one of us (A.H.) had given them 200 mcg or more of LSD, Hubbard sat by the patient and conducted the session while three psychiatrists (A. Hoffer, C. Smith, and N. Chwelos) observed him and the patient.

Hubbard's method was designed to create a situation most apt to lead to a transcendental or psychedelic experience. This aspect of the treatment was not radically different from the methods we had developed at that time as a result of our own experiences and observations. But he did demonstrate the value of visual and auditory aids, such as painting, works of art, music. He showed great skill and sensitivity in his discussions with the patients under LSD. In general, it appeared to us that his method would be more apt to give alcoholic patients the psychedelic experience we felt they should have.

In 1959, Chwelos, Blewett, Smith and Hoffer reported the results of our revised technique on an additional 16 alcoholics. The newer technique was described as follows:

> Following this original series, our research group was in contact with Hubbard, who had demonstrated a somewhat different approach. We have adopted some of his modifications and have introduced others.

We had noted before from our studies of the psychotomimetic properties of this drug that the environment and particularly the attitude of the people around the person undergoing the LSD experience seemed to influence his reaction profoundly. Staff members who have had an insightful LSD experience or who have participated in many sessions as observers are better able to aid the subject during his experience. On the other hand, unsympathetic, hostile and unfeeling personnel bring about fear and hostility with a marked increase in the psychotic aspect of the experience. Allowing staff members an LSD experience automatically changed attitudes by greatly increasing empathy with the person undergoing the experience.

The modifications used since January 1958 are as follows: the environment surrounding the patient taking LSD was changed by the addition of auditory stimuli, visual stimuli, emotional stimuli, and a change in the attitude of the people in contact with the patient.

The auditory stimuli consisted mainly of music supplied by a record player. Usually classical, semi-classical, and relaxing music was played. The person was encouraged to lie down, relax and listen closely. Visual stimuli consisted of various pictures which the patient examined and concentrated on intently. Other visual stimuli such as cut flowers were sometimes used. The auditory and visual stimuli served to show the person the great enhancement of perception, but what appears to be more important, they aided him in getting his mind off himself. He was reassured that it was not unusual to have visual imagery in the experience. For emotional stimuli, photographs of relatives were often used. The subject was encouraged to study these closely for long periods. The suggestion was made that he could become markedly aware of unhealthy attitudes toward the people in the photographs and he was assured that his thinking in the area would be clear and free of rationalizations and thus more useful to him later on. He was also asked to concentrate on a list of questions that he had previously compiled about his problems.

We believe that it is absolutely necessary for every therapist to undergo the LSD experience; we feel that doing so substantially increases understanding of the patient's experience and that the therapist's attitude becomes much more accepting, thereby making him more effective not only during the experience but in terms of aftercare.

The patient was encouraged to accept himself during this period while his thinking was more emotionally charged and he was less likely either to rationalize or to have guilt feelings. The therapist avoided all forms of reproach, but at the same time he stressed the patient's own responsibility for the perpetuation of his difficulties and for the removal of the unhealthy attitudes from which these difficulties arose. Optimism is important and it was emphasized that the subject, by becoming aware of his pathological attitudes, could modify them.

No psychotic patients were included in our newer series. The results did seem to be superior (see Table 2), but the series was a small one and the follow-up period was shorter than was Smith's (1958).

MacLean, MacDonald, Byrne and Hubbard (1961) had further developed the procedure and, using this method, treated 61 alcoholics. They described it as follows:

> Once the autobiography and history are completed the therapist has several preparatory sessions with the patient during the two days prior to the special treatment day. The emphasis here is on those aspects of the self which could emerge as barriers to a constructive or integrated LSD 25 experience. A half hour is spent with the patient shortly before he goes to the treatment room.
>
> Our method employs a professional therapeutic group which acts as a stabilizing influence on the patient, providing him with support. Each group member contributes a unique pattern of treatment and personality. We suggest that it may be possible for the patient to see reflections of the different facets of his own personality in each of these individuals. We think a group of four is best. Generally this includes the psychiatrist (as therapist), a psychologist (co-therapist), a psychiatric nurse and a music therapist. Ideally the group would be made up of two men and two women. Unless all of these have first-hand knowledge of a successful psychedelic experience, they tend to become bored or confused during the session and are unable to offer support to the patient under circumstances they do not understand. This tends to upset and confuse the patient.
>
> However, in our technique, the group is usually somewhat larger and participates in the session without taking the drug. The advantages in our method are threefold.
>
> The patient who alone takes the drug is less distracted from intense self-scrutiny and self-evaluation than one who is a member of a group, all of whom are participating directly in the experience.
>
> We consider it important that the therapist refrain from projecting his view upon the subject; in a group session where all participants have taken the drug it is impossible to avoid this.
>
> The function of the therapist is enhanced when he is free to act as an objective observer and thus modify his approach to the patient. Such objective assessment for therapy or research purposes is only possible when the therapist is not taking LSD 25 himself.
>
> The environment in which treatment is given is a significant factor, for just as the presence of a select group lends support to the patient, so do his physical surroundings. A quiet room is needed to prevent distraction. The appointments of the room—drapes, floor coverings and furnishings—should be tastefully combined with floral arrangements and pictures to create a harmonious atmosphere. The dominant theme of the decor should be composed of various universal symbols. The patient will go through a good part of the experience lying down; consequently comfortable facilities are required. Technical equipment should not intrude upon the atmosphere of the room. Adequate measures should be prearranged to avoid the disruptive influence of interruptions during the session.
>
> We use doses varying from 400 to 1,500 mcg given by mouth. The initial dose depends on the psychiatric appraisal of the subject's defense mechanisms. We think that the closer a person is to self-acceptance the less the dosage required, and we use this as a working guide. We usually start with a dose of 400 mcg; experience as the

session progresses is used to decide if and when more is required. If after one or two hours the patient shows signs of anxiety because he is holding on desperately to his reality ties, more LSD 25 is needed to induce the psychedelic experience.

Some therapists have suggested gradually increasing doses over a number of treatment sessions, believing that this reduces the patient's fear. We have found, however, that small-dose techniques are less effective as they do not lead to a full realization of the therapeutic potential of the experience. Small doses do not alter the habitual frames of reference which may have initially induced the patient's problems, and often reinforce those same unfavorable patterns of thinking and feeling which constitute his problems.

LSD 25 can be obtained as a clear, tasteless, odorless liquid. In our procedure, the dose is measured into a glass of water and taken orally. The drug also may be obtained in the form of an oral tablet or intravenous solution.

The patient comes to the treatment room at 8 A.M. where he finds the group convened and ready to receive him. Rapport is established through general conversation over coffee. At 8:20 A.M. the drug is administered and the therapist explains to the patient the functions of the group, the setting and the symbols. The patient's questions are discussed by the group. Variation in the psychiatric problem and the individual's tolerance for the drug make each experience somewhat different. The first symptoms may appear from within 15 minutes to an hour. Mild physical discomfort may be experienced during the first hour or two. The height of the experience is reached between 10:30 A.M. and 12:00 M.

A complete time-indexed record or transcript is kept by one of the attending therapists. From about 10:30 A.M. to 2:00 P.M. most subjects are quietly engaged in intense self-scrutiny. At about 2 or 3 P.M., the subject will begin trying to conceptualize his experience and at this time the therapist can aid him greatly by non-directive methods. About 4 P.M. the patient returns to his room. A counselor, trained in psychedelic therapy, remains with him until bedtime.

This can be one of the most valuable portions of the session. The process of applying what he has learned begins in the treatment room and is further expanded in his relationship with the counselor. It is important not to shut down the integrative process, while it remains active, by the use of chlorpromazine or the like. The patient remains in the hospital overnight. Before discharge the next day, he is interviewed by the therapist and is asked to give a written account and an assessment of his experience.

These results are shown in Table 2.

Jensen began one of the best controlled comparison experiments at the Saskatchewan Hospital at Wayburn under Dr. H. Osmond. This was reported at the Third International Congress of Psychiatry, Montreal 1961, and later published (1962).

Treatment was carried out on a male admission ward where ten alcoholic patients comprised part of a group of 40 psychotic patients. The alcoholics had their own dormitory. After physical examination and treatment for the complications of alcoholism, the patients were started on a series of three A.A. meetings per week. These were not compulsory, but

TABLE 2

Results of Treating Alcoholics with LSD as a Main Treatment Variable

Investigators		Number	Follow-up period (months)	Much improved	Results Improved	No change
Osmond	(1953)	2	9	1	-	1
Smith	(1958)	24	2-36	6	6	12
Chwelos	(1959)	16	2-9	10	5	1
Maclean	(1961)	61	3-18	30	16	15
Jensen	(1962)	58	6-18	34	7	17
O'Reilly	(1962)	33	2-22	7	10	16
Sherwood	(1963)	3	5	3	-	-
Eisner	(1958)	2	-	1	-	1
Savage	(1962)	20	-	10	-	10
Savage	(1964)	24	4-36	17	-	7
O'Reilly	(1963)	68	2-34	26	-	-
Total LSD				145	44	80
Comparison controls—LSD						
Jensen	(1962)	80	6-18	11	7	62

strong encouragement was given them to attend. They also were given two hours of group psychotherapy. The alcoholics were encouraged to form a group, which they did. Toward the end of the period of hospitalization (mean: two months) the patients were given the LSD treatment. They received 200 mcg. During the session the therapist remained seven to eight hours with the patient. Patients were encouraged to bring their own records and family photographs. The therapist worked with the patient to bring out repressed memories, abreactions, new insights, and new understanding.

Another group received similar therapy but were not given LSD, either because they were considered physically unfit or because they did not want it. They left the hospital early. A third comparison group consisted of alcoholic patients admitted during the same period and they received individual therapy from other psychiatrists.

Jensen's criteria for "much improved" were complete abstinence after discharge or abstinence after a brief drinking bout shortly after discharge. Jensen was given a difficult group of alcoholics. The Bureau of Alcoholism sent only failures who had exhausted every possibility of treatment. The results (See Table 2.) are therefore particularly striking.

O'Reilly and Reich (1962) treated a fairly large number of difficult alcoholic patients with LSD. They described the treatment as follows:

> The treatment team included the patient, his nurse and the therapist. The environment in which the treatment is given is considered important. A special single room was designated as the treatment room. This room was tastefully furnished. Visual stimuli such as paintings and cut flowers were introduced to show the person the great enchantment of perception. Auditory stimuli consisting mainly of music supplied by a record player were utilized. The patient was encouraged to relax and listen to music. He was given his choice of music when possible. The patient was encouraged to go through a good part of the experience lying down.

The patient came to the treatment room with his special nurse at 8:30 A.M. He was given a dose of 200 mcg of LSD in a glass of water and asked to lie down and relax on the bed. An initial discussion occurred between the therapist and the patient. A prolonged interview was carried out at the height of the experience about two hours after ingestion. The interview was conducted along psychodynamic principles. The subject was encouraged to study his problem areas, and the therapist led the patient to ventilate these particular areas. The patient was never left alone, his special nurse remaining with him throughout the treatment period. During the treatment the patient was encouraged to verbalize the experience and to think about and discuss his problems. If the patient needed more LSD 25 to induce a psychedelic experience (characterized by development of useful insight in contrast to a psychotomimetic one in which psychoses were merely mimicked), a further 100 mcg was given. When the therapist decided that an adequate experience and abreaction had occurred, the session was terminated by giving 100 mg of niacin intravenously and one gram orally. At 9 P.M. on the night of the experience the patient was given six grains of Tuinal orally to ensure that the subject would have a good night's sleep. Each subject was asked to write an account of his experience on the day following the treatment. Providing the patient was over his experience, he was discharged on the second day following this session.

Recently O'Reilly and Funk (1963) completed a community follow-up study of 68 alcoholics who had been treated with LSD December 1959 to August 1962 in O'Reilly's Psychiatric Department. About two-thirds had been alcoholics for more than ten years. None were psychotic when they were given the LSD treatment. All alcoholics who had remained totally abstinent for two months before being seen on follow-up were classed as abstainers. Twenty-six, or 38 percent, of the group were abstainers at follow-up. The rest were not; but there were many whose drinking had become less pathological. Many variables were examined which could affect the outcome. These were age, marital state, educational level, membership in A.A. or in church groups, number of years of alcoholism, diagnoses, number of previous treatment sessions and the identity of the treating psychiatrists. None of these variables was related, nor could the outcome be predicted from them. The only factor which correlated significantly with abstinence (at the $P < .01$ level) was the nature of the subject's experience. The outcome in patients experiencing depression and/or claiming a transcendental experience without signs of physical distress, or of post-treatment disturbance, was much better than others. Using this criterion, the authors identified 46 percent of the abstainers. Only six percent of the non-abstainers had this kind of experience. Only one patient (out of 68) subsequently developed paranoid symptoms. These results appear in Table 2.

Sherwood, Stolaroff and Harman (1963) used similar psychedelic techniques for treating three alcoholics amongst a group of 25 psychiatric patients. All three remained much improved after treatment.

Eisner and Cohen (1958) reported on a series of 22 psychiatric pa-

tients who had been treated with LSD. Two were alcoholics. It is of interest that one was improved and the other unimproved. The one who improved received LSD six times, culminating with a dose of 500 mcg. The subject who failed to improve was given LSD four times, the last and highest dose being 100 mcg.

Terrill (1962) used a similar method, providing a relatively permissive, pleasant atmosphere. "All drug sessions were conducted in a small soundproofed room," he reported, "that was very comfortably furnished with a couch, carpet, pictures on the wall and a stereo record player. Subjects usually were offered an opportunity to listen to music or look at visual stimuli. An attempt was made to reduce stress to a minimum. Someone was with the subjects during most of the day. They could talk with someone if they wished, although it was made clear to each subject that he need not talk if he did not feel like it."

Volunteer subjects and patients were treated much alike; although the patients entered the sessions with a set very different from that of the volunteers.

According to Savage (1962), out of a group of 20 hospitalized alcoholics given 150 to 500 mcg, 50 percent had stopped drinking at follow-up.

Recently, Savage, Hughes and Mogar (1964) reported that, out of 24 alcoholics followed up, 17 were better, 6 were not changed and 1 was worse.

These 11 studies all are remarkably alike. The philosophy and method of treatment were based on the psychedelic experiences. The settings were comfortable, relaxed and the subjects were allowed to think, feel and meditate on the insights they acquired. The results were similar throughout.

The only comparison study was reported by Jensen. Out of 80 patients not treated with LSD, 18 were improved or much improved; out of 219 patients who received LSD, 146 were improved or much improved (Chi Sq. is over 50).

Many alcoholism treatment centers are investigating LSD and other psychedelic drugs for use in treatment. The resulting publications are just beginning to appear. In a recent report, J. Locke (1963) interviewed Dr. Florence Nichols, of the Bell Clinic in Toronto, who stated that she had treated about 100 alcoholics with LSD. Confirmed alcoholics for twenty years, the large majority had attained sobriety, and most of the others were making progress. In a personal communication, Dr. F. Nichols (June 1963) corroborated the statements published by J. Locke.

Studies by Belden and Hitchen (1962) (1963), using similar methods, also corroborated these results. Belden *et al.* used about 300 mcg of LSD, and found the treatment unusually effective for psychopathic or character-disorder alcoholics. Schizo-affective patients were not benefited. Belden *et al.* estimated their results conservatively as follows: one-third achieved total abstinence over prolonged periods, with improvement in socio-economic mobility; one-third were failures; one-third disappeared.

Other studies underway have not been reported at this writing. Work-

ing with Dr. H. Osmond at New Jersey, Dr. F. Cheek found that LSD produced significant improvement in their alcoholic cases. The pilot study at Spring Grove State Hospital described by Kurland and Unger suggests that they will obtain similar results. Out of about 45 alcoholics treated and followed up at 3-6 months, about two-thirds were much improved.

VARIABLES WHICH INFLUENCE THE LSD EXPERIENCE

Chemicals which interfere with the function of the brain produce changes in perception, in thought, in mood and consequently in activity. They alter the way subjects see, hear, taste, touch and in other ways sample their environment. The subjects may or may not react in unusual ways, depending upon their individual personalities and life experiences. These chemicals do not impose a general or uniform way of thinking, and there is no uniform personality change. So many factors influence the content of the individual reaction that no psychological test has yet proved useful in predicting what will happen, how long the experience will last and what the consequences will be. The factors are classified into three main groups: (1) factors within the subject; (2) factors within the therapist; (3) factors within the environment.

Factors within the subject

a. Personality. Not even the dictionary provides a satisfactory definition of this term, yet most of us feel that we know what it implies. I describe personality as comprising those general attributes of any living being through which he is recognized by friends or enemies. Personality is not a constant, but is rather primarily a form of reaction to the environment. It includes the physical body, its rate of reactivity, the manner of speech, the way the person reacts to other people, to situations, to stress, anxiety, misfortune, good fortune, etc. Only a superb novelist could adequately describe personality, and the task could take years of work and produce hundreds of pages of material. It is not surprising that no "personality test" has predicted successfully the human reaction to drugs, especially to LSD.

b. Somatotype. Sheldon (1953) described three main types. He presented evidence that there was a relation between somatotype (physical characteristics) and personality. It is likely that somatotype influences the reaction to LSD, but there has been little research on this question.

c. Education. A subject possessing a Ph.D. in philosophy will not have the same kind of LSD experience as will the public school graduate; nor will each subject possess the same vocabulary for describing his reaction. This does not mean that the experience of one is in any way inferior to the other although it may seem so to the observer.

d. Vocation. A professional writer, accustomed to expressing his ideas, will respond to LSD quite differently from a psychiatrist, who is accustomed to listening and to interpreting. This fact has not been fully grasped, and accounts for some of the dissatisfaction with many of the

LSD accounts which have appeared. Accounts of the LSD experience fall into two groups. The first consists of reports by research psychiatrists and psychologists based on descriptions of the experience received from their subjects, and on tests which they abstract. These are usually dull, uninteresting and do not not even partially describe the experience. The second are those written by subjects who are either professional writers or highly literate people, and thus well equipped to describe the experience effectively. The account by Aldous Huxley in "Doors to Perception" is the best example of the second group. There are a few scientists with creative writing ability who have given extremely vivid and accurate reports of their response to LSD. Several scientists have described their reaction to mescaline, including Havelock Ellis (1897), Weir Mitchell (1896) and Heinrich Klüver (1928). Humphry Osmond described the LSD experience (1957). But the most exciting, vivid, fascinating accounts are produced by the creative writers. These experiences are true for these talented people, but do not necessarily represent what the rest of humanity might expect. Many of us may feel disappointment and frustration because we do not have all the experiences described in the literature.

Yet one's vocation does not always determine the experience. There are several reports by philosophers who found nothing in their response to LSD which quickened or altered their philosophy. There have been Zen mystics who suffered only tension and pain from LSD, even though the experience has been compared to Zen mysticism (Dusen 1961).

e. Age. The majority of subjects have been over 18. The few very young people to whom I have given LSD seem to react similarly to adults and the very old. Factors such as education and vocation are probably much more important variables.

f. Health. The state of physical health is important. A subject indisposed by a cold will not react as would a perfectly healthy person. Perhaps even more important is the presence of psychiatric disease. There is a large literature concerning schizophrenic patients who have been given LSD, and the response as compared to that of normal subjects. There are predictably major differences. It is probably equally true that subjects with depressions, anxiety neuroses, or epilepsy, for example, will react differently from normal subjects.

g. Reasons for taking LSD. The set, or expectation, of subjects is extremely important. The alcoholic who hopes the experience will increase his self-understanding and help him stay sober will react differently from the alcoholic who is forced to take LSD by pressure from his wife and family before he can be convinced that he is an alcoholic. The volunteer who takes LSD for pay to help a research psychologist will respond differently from a volunteer who participates out of a sense of duty to his Profession, or to his director or his colleagues.

The subject's preconceptions, right or wrong, will also influence the experience. If he suspects it to be a truth drug, he will have one kind of response; if he expects to reawaken his early memories, he will have an-

other. Set, or expectation, also is influenced by the therapist, and the kind of information he conveys to the subject.

h. Experience with drugs. The first LSD experience is the least representative for any person, even though it may be the most vivid, startling and dramatic. In most cases there is a degree of anxiety and suspense which adds something to the intensity of the reaction. It is like opening night in the theatre or the first glimpse of an atomic explosion. Thereafter the reaction may be as rewarding or as fearful but it is seldom as memorable or as intense. Thereafter each experience has a life of its own and differs in essence from the one before and those to follow.

Subjects develop tolerance to LSD very quickly. The first time, 100 mcg will produce an intense experience in most normal subjects. But there must be a few days' rest before the session is repeated; for if the same quantity is taken the second day, the experience is much weaker by comparison. The third day there may be no reaction at all. If there is an interval of three to five days the experience can regain some of its original intensity. I have given subjects 300 mcg on one day, obtaining the usual reaction. The second day there was hardly any reaction to 100 mcg, and, for up to a week, 100 mcg each day produced so little reaction that the subject was in effect unaware of taking the LSD.

Familiarity with other drugs which produce psychological changes is also relevant. Alcoholics and drug addicts seem better able to cope with the LSD experience than normal subjects. I have had more difficulty with anxiety and panic from normal subjects than from patients with long experience with drugs. Perhaps the often repeated experience of being inebriated, or toxic, and of having had *delirium tremens* prepares these subjects for LSD. Perhaps this is why alcoholics need much more LSD than normals in order to have the full reaction. The series of many hundred alcoholics in Saskatchewan suggests that 300 mcg the first time is equivalent to 100 mcg for most normal subjects.

i. Previous psychiatric treatment. Since psychiatric treatment produces a particular set, or state of mind, varying, of course, with the orientation and skill of the therapist, it is not surprising that subjects who are psychiatrically sophisticated will respond differently from naive subjects. Subjects who have been psychoanalyzed rarely have a psychedelic experience. Ditman, Hayman and Whittlesey (1962) reported that few subjects with psychoanalytic orientation were benefited. I have made similar observations. It may be merely coincidence, but out of several thousand subjects who were given LSD in Saskatchewan only seven had been psychoanalyzed. Every one of the seven had a uniformly bad time of it, although they were treated the same as the others and by therapists with strong psychological interest and orientation. Yet nationally known psychoanalysts, such as Doctors H. A. Abramson and R. Carrier, have treated patients successfully with low and high doses of LSD while using analytic psychotherapy. Perhaps the conclusion here is that analyzed subjects should be given LSD only by psychoanalysts.

j. Premedication. The many drugs which influence the LSD reaction will be described further on. It is important that subjects about to get LSD

not be tranquillized or heavily sedated, since this may prevent the experience from developing its normal intensity.

k. Circadian rhythm. The time of day can be quite important. In general, experiences are more intense in the evening or at night. Intensity of experience can be produced by less LSD than during the day.

l. Relation to meals. For many years I gave subjects LSD at 9:00 A.M. and did not allow them breakfast. A couple of years ago Dr. R. Laidlaw of New York City informed me that LSD given after a full breakfast made the induction period much easier. The usual introductory tension, pain and anxiety were much less troublesome. Since then I have given my subjects breakfast before LSD, and have corroborated Dr. Laidlaw's observations. There is a smoother and more pleasant induction into the full experience. Nausea is rare, and there is almost no retching and vomiting. With an empty stomach, these are fairly common.

m. The dose. Most volunteers (subjects who are not patients) will have an unequivocal reaction when given 100 mcg of LSD but my estimate, based upon several hundred subjects, is that ten percent will have minimal or no LSD reaction with this dose.

In a series of experiments over the past ten years, no subjects have failed to react in the expected manner to 200 mcg. However, perhaps 25 percent of alcoholic subjects will react minimally to 200 mcg and about 90 percent will react to 300 mcg.

n. Frequency of experience. The majority of investigators who have reported their studies on LSD have used volunteers or patients only once. Much of the theorizing, based upon this type of research, about the interaction of the chemical, LSD, with the psyche must, therefore, be incomplete, since the first experience is the least representative for the subject. Those of us who have given LSD to the same subject many times know that each experience differs from any preceding one, as sharply as do the experiences of different subjects. The first experience has the most vivid perceptual changes, the greatest degree of thought disturbance and anxiety, while subsequent experiences produce fewer perceptual changes and much less thought disorder.

The quality of the experience must depend, of course, on the combination of dose and frequency. There are various ways of combining dose and frequency. One is to start with low doses, under 100 mcg, and increase them slowly until high doses, 200 mcg or more, are reached—the method preferred by some psychoanalysts (Abramson, 1960). Another is to administer the same dose each time—the method used by Smith (1958), Chwelos, Blewett, Smith and Hoffer (1959), Jensen (1961, 1962), O'Reilly and Reich (1962), O'Reilly and Funk (1963), etc. When LSD is used as a treatment for alcoholics, the initial dose is generally 200 mcg or more. Normal subjects are given 100 mcg and this is repeated in subsequent experiences. Sometimes alcoholics do not react to 200 or 300 mcg. When treatment is repeated they are given 500 mcg or more. The objective in each case is to produce an experience where anxiety and tension are minimal, where perceptual changes are moderate and where the achievement of insight and self-understanding are maximal. It is important to give

enough LSD to cross what might be called the tension barrier, and to markedly lower the level of anxiety.

Some chemicals produce an effect which is related linearly to dose. This simplifies pharmacological study. But other compounds act quite differently. Thus, some sedatives and tranquilizers seem to have a simple, linear, dose-response relationship in producing sedation. But gas anesthetics produce an increase in agitation and excitement at the second phase of anesthesia, and only after subjects enter into the third phase of anesthesia (unconsciousness) does the level deepen as the dose is increased. LSD resembles an anesthetic more than a sedative, in its effect on the level of relaxation. At very low doses, 20 mcg or less, very little happens. At 50 mcg, there is an increase in alertness. At 75 mcg some subjects react with a strong experience and others remain very tense and uncomfortable. At 100 mcg about 75 percent of normal subjects become very relaxed and remarkably free of tension. The remainder may require 200 mcg to get the same degree of relaxation. There must be a maximum degree of relaxation before the psychedelic experience is achieved; most subjects have very tense, unpleasant experiences when given too little LSD.

If the initial experience is marred by the presence of overwhelming perceptual changes, the subject benefits little and often will have forgotten most of the experience by the next day. Subsequent doses should then be reduced. Once a good working dose has been determined it is advisable to continue this quantity for future treatment experience.

2. *Factors within the therapist*

In any LSD experience, there is one key person, the psychiatrist, psychologist, or other therapist, who takes responsibility for the session and on whom the subject depends throughout the experience. This person plays a powerful role in determining the kind of reaction the subject will have. Important factors within the therapist include:

a. His experience with hallucinogenic drugs. The most effective therapist is one who, having taken LSD himself, is able to sense the specific reaction of his patient at any time. If the therapist has had a psychedelic reaction, he is more apt to understand such a reaction in his subject. If a therapist has had a psychotomimetic experience, he will find it difficult to understand the use of LSD in therapy.

If the therapist has never taken LSD, he can learn much about it from carefully observing the reactions of many subjects to LSD. But what he learns about LSD reaction depends in part on the therapist's objectives in acquiring this knowledge. If he has run an experimental program to study LSD's ability to model schizophrenia, he will not see the reaction as it will be seen by a therapist who is studying LSD's value in enhancing creativity among artists, for example.

b. The objectives of the therapist. The psychologist who expects his subject to perform psychological tests under LSD is quite uninterested in the subject's early memories. In fact, the numerous perceptual changes which are so fascinating to many are merely a curse to the tester since

they interfere with and even can ruin the best planned protocols. The therapist who treats patients will be interested in those aspects of the experience he believes relevant to the problems of his patients, and he will subdue others. He even may use drugs to reduce perceptual changes. The psychiatrist who uses LSD to produce a model of *delirium tremens* will not be surprised if his subject has a reaction similar to *delirium tremens* but continues to drink thereafter.

Other factors within the therapist need not be detailed. They will include his personality, his tastes and avocations, education and orientation. I have no doubt that a Jungian analyst will be delighted with archetypes produced by LSD, and that Freud's disciples will have no difficulty in observing the revival of early memories of Oedipal conflict.

3. *Factors within the environment*

The setting is just as important to the LSD experience as are the props and sets of the theatre to the over-all performance. Although badly arranged settings may not interfere with the experience, for some subjects, this would be unusual. In general, all agreeable elements of space, color, sound and physical comfort tend to help in producing pleasant or psychedelic experiences, whereas noisy, unpleasant, uncomfortable surroundings do the reverse.

a. Physical setting. Some investigators have designed spaces which tend to increase the subject's chances of a psychedelic experience. Very little is known about such problems. Perhaps when enough architects have taken LSD in various surroundings we will then have ample, properly designed space for psychedelic treatment.

b. Number of people present. The number of people present can have a significant effect upon the LSD response (Cheek 1963). There are no hard and fast rules about what is the optimum number. It depends upon the familiarity and trust between subject and observers, and on the objective of the session. If the objective is therapy, then two to four is an optimum number. If the objective is communication of emotion or ideas between skillful LSD subjects, five or six may be tolerable. In any event, it is best for all observers to be present before the subject develops his experience. They then may come and go without unduly disturbing him. A stranger coming into the room can have a profoundly harmful effect on the experience. The most harmful setting is one where strangers, visitors and other curious people are allowed to pop in and out.

c. Visual and auditory aids. Photographs, paintings, colorful drapes and rugs help the subject gain good experience. Music can also be very helpful. I have seen subjects fixed in a psychotomimetic experience pass within seconds into the psychedelic experience when especially meaningful music was played. Some subjects, however, find visual aids repulsive, and music intolerable, as it is extremely distracting and prevents them from fully experiencing other components of the reaction. Their wishes and feelings must be honored. Terrill (1962) concluded: "Any attempt to impose a structured test or interview radically altered the experience."

THE PSYCHEDELIC EXPERIENCE

Psychedelics

(Hallucinogens)

Give me a button of wild peyote
To munch in my den at night,
That I may set my id afloat
In the country of queer delight.

So ho! it's off to the land of dreams
With never a stop or stay,
Where psychiatrists meet with fairy queens
To sing a roundelay.

Give me a flagon of mescaline
To wash o'er my mundane mind,
That I may feel like a schizophrene
Of the catatonic kind.

So hey! let in the visions of light
To banish banality,
Then will I surely catch a sight
Of the Real Reality.

Give me a chalice of lysergic
To quaff when day is done,
That I may get a perceptual kick
From my diencephalon.

So ho! let all resistance down
For a transcendental glance
Past the superego's frosty frown
At the cosmic underpants.

Give me a pinch of psilocybin
To sprinkle in my beer,
That my psychopathic next-of-kin
May not seem quite so queer.

So hey! it's off for the visions bizarre,
Past the ego boundary,
For a snort at the psychedelic bar
Of the new psychiatry.

—F. W. HANLEY, M.D.

Natural phenomena are usually known or perceived long before they are named, but seldom are accorded detailed study and examination by scientists, philosophers and others, until they have been given a name. For the possession of a name gives to the phenomenon a kind of reality or solidity it did not have before. In his now classic paper, Osmond (1957) showed that many investigators working with LSD had learned that the experience did not always model schizophrenia as we generally know it. On the contrary, many subjects had unusually vivid, insightful and happy

experiences from which they derived a good deal of understanding about themselves, about others and about their relation to the cosmos. Osmond summarized the potential uses of this kind of experience as follows: (1) as an aid to psychotherapy and to its variant, psychoanalysis; (2) to educate those who work in psychiatry and psychology in the understanding of the strange ways of the mind; (3) to explore the normal mind under unusual circumstances; (4) to examine the social, religious and philosophical implications of these agents. Osmond was aware that none of these potentials had much chance of being realized until the experience which could make them possible was drawn to the attention of the scientific world under a new name. The new name also would make clear to some scientists, then working with LSD, that it was something more remarkable than a mere psychotomimetic, or a device for producing a toxic psychosis.

To attract the attention of the scientific world, and explain the nature of LSD, Osmond coined the word "psychedelic," which he then defined: "a psychedelic compound is one like LSD, or mescaline, which enriches the mind and enlarges the vision. It is this kind of experience which has provided the greatest possibility for examining those areas most interesting to psychiatry, and which has provided men down the ages with experiences they have considered valuable above all others."

Osmond pointed out that this interest in chemically produced new states of mind is not new. It has been sought and studied since the dawn of history and has played a notable part in the evolution of religion, art, philosophy and science. The Wassons made a persuasive case for the origin of all religions in the mental states produced by the hallucinogenic mushrooms. Man has not been deterred by the greatest obstacles in his search for these mystical states. To some, these experiences came easily, but others had to undergo prolonged and severe mortifications of the spirit and flesh before the desirable visions were achieved. Many have found it so difficult to achieve these states that man came to consider it almost immoral if they came with little effort.

In fact, one of the sharpest criticisms of the psychedelic experience is that it comes rather too easily, as if only that which is attained with extreme difficulty is valuable. The experience is debased, so they say, unless the price is high. An example of this attitude is seen in Dean Peerman's book review of "The Joyous Cosmology: Adventures in the Chemistry of Consciousness." Peerman's title, "Instant Mysticism," is designed to create an atmosphere of hostility and derision. Peerman evidently is disturbed by his misconceptions: (1) that hallucinogenic drugs are "artificial," not natural (which is odd, since they are synthesized by nature—in fact, starvation and flagellation seem less natural ways of acquiring instant mysticism); (2) that these instant (chemically induced) experiences will allow men to escape "the world of selves, of time, or moral judgment, of utilitarian considerations—precisely the things with which the Christian who in gratitude seeks to do God's will must be concerned."

Peerman represents the immediate, thoughtless reaction of the ignorant. Contrary to his fears, it is precisely these matters which are

brought forcefully to the attention of the individual and to society by these psychedelic experiences. They have led directly to some of the most beneficial movements in society and religion, such as A.A., and recently, Synanon, a new and promising society which may do for the drug addict what A.A. has done for the alcoholic. Osmond anticipated these objections when he wrote, "While we are learning, we may hope that dogmatic religion and authoritarian science will keep away from each other's throats. We need not put out the visionary's eyes because we do not share his vision. We need not shout down the voice of the mystic because we cannot hear it, or force our rationalizations on him for our own reassurances. Few of us can accept or understand the mind that emerges from these studies. Kant once said of Swedenborg, 'Philosophy is often much embarrassed when she encounters certain facts she dare not doubt yet will not believe for fear of ridicule.'

"In a few years, I expect," Osmond continues, "the psychedelics will seem as crude as our ways of using them. Whether we employ them for good or ill, whether we use them with skill and deftness or with blundering ineptitude, depends not a little on the courage, intelligence and humanity of many of us working in the field today.

"I believe that the psychedelics provide a chance, perhaps only a slender one, for *Homo faber,* the cunning, ruthless, foolhardy, pleasure-greedy toolmaker, to emerge into that other creature, whose presence we have so rashly presumed, *Homo sapiens,* the wise, the understanding, the compassionate, in whose fourfold vision, art, politics, science and religion are one. Surely we must seize the chance."

Since Osmond's delineation of the psychedelic experience there has been an extraordinary development in this field. The subject has been described in poetry, in learned journals, in the lay press and in the *Psychedelic Journal.* Even within this brief period, there have been three stages of psychedelic research. The first consisted of Osmond's early work, followed by research we carried out in Saskatchewan, which was largely exploratory but led to our large therapeutic trials using LSD as a component in the treatment. The second stage was developed by the group at the International Foundation For Advanced Study, Menlo Park, California. Professor Harman and his colleagues have been their ablest advocates. This work expanded the use of the psychedelic concept into the broad group of behavioral problems and neuroses. The main catalyst has been A. Hubbard.

The third and present stage is typified by the careful studies and researches of S. M. Unger (1963). The first two stages were carried out in relative freedom from harsh criticism since the vast majority of people were unaware that these studies were being made. Most psychiatrists either were ignorant of the investigations, or if they had heard of LSD, thought of it only as a drug used by research psychiatrists for making people mad. But stage three was marked by the tremendous upheaval and turmoil which followed the Harvard University enterprises of R. Alpert and T. Leary, in 1962. One result of this massive use of LSD on large numbers of volunteers was a remarkable flood of words on LSD's uses and abuses

until it is hardly likely any literate citizen has not heard something about it. The controversy, according to the magazine *Pageant* (1963), "rocked the academic, medical and psychological professions—as well as the governments of the U.S.A. and Mexico." Feature articles were published in *Confidential, Cosmopolitan, Esquire, Fate, The Ladies' Home Journal, Life, Look, MacLean's, Medical Tribune, Medical World News, Playboy, The Reporter, Saga, The Saturday Evening Post, Time, The Toronto Star Weekly;* cautionary editorials have appeared in the *Journal of the American Medical Association,* and in the *Archives of General Psychiatry* (Grinker, 1963).

As a result of the widespread interest in psychedelic drugs displayed in the mass media, other events predictably followed: (a) there was a public demand, supported by professionals, for the introduction of strict, legal controls. The professional advice was offered by two groups: those research psychiatrists who were very familiar with LSD, its uses and its evils, such as Cohen (1960) and our own group, under my direction, in Saskatchewan, who recommended controls so that these drugs would be made freely available to physicians skilled in the use of LSD; and those other authorities such as Grinker (1963), who never had published any work on LSD, and presumably were uncontaminated by first-hand experience with it, whose criticisms were based on faulty reading of the literature and, if accepted, could have led to the suppression of these chemicals; (b) strict legal controls were instituted in U.S.A. and, of course, also in Canada. For a while it seemed as if LSD would join Thalidomide as a banned drug in Canada. Fortunately as a result of advice given freely to Canada's government by organized medical societies, LSD was placed in a restricted category and is now available to psychiatrists who have University appointments and are listed with the Minister of Health.

It was in this atmosphere of fear and mistrust that Unger (1964) became vocal in his support of the psychedelic concept. Fortunately, in Saskatchewan, there never has been any controversy, since we developed safeguards early. It now seems most probable that within a decade or less North America will have entered stage four, where we in Saskatchewan are now, in which psychedelic drugs are used for specific indications (of course, there are contra-indications), in controlled settings by skillful therapists.

Stage One of Psychedelic Research

Following Osmond's review (1957), we began an intensive study of the psychedelic experience. Before this we had used LSD as a treatment in a psychotomimetic way. We hoped that a frightful experience which modeled the worst symptoms in natural *delirium tremens* could persuade our alcoholic patients not to drink any more and so avoid *delirium tremens.* But in 1957, it was apparent that even though many of our patients were helped by LSD, it was not its psychotomimetic activity which was responsible. In spite of our best efforts to produce such an experience, some of our subjects escaped into a psychedelic experience. Our psychiatrists

were more at ease working with the psychedelic experience since it made possible the establishment of a therapeutic relationship and the use of psychotherapy.

In 1959, the results of psychedelic therapy on a group of alcoholics were reported by Chwelos, Blewett, Smith and Hoffer, who classified the subjective psychedelic experience into stages, or degrees, as follows:

a. *Flight into ideas.* This is characterized by tension, irritability and a vivid awareness of perceptual changes, both internal and external.

b. *Stage of somatic awareness.* The subject remains preoccupied with his somatic discomforts.

c. *Stage of confusion and perceptual distortion.* This is the most schizophrenia-like stage.

d. *Stage of paranoia.*

e. *Stage of dual reality.* Here the subject is aware that the LSD experience, as compared to the experience of normality, is a valid one that can be used to explore many aspects of the inner and outer world of experience.

f. *Stage of stabilization.* The experience is accepted as offering a new and richer interpretation of all aspects of reality. Such experiences were described by William James who said, "They are as convincing to those who have them as any direct, sensible experiences can be and they are, as a rule, much more convincing than results established by mere logic ever are."

These stages or types of experiences are gradations toward the psychedelic experience. Subjects may go through them in this sequence or some may be skipped; not everyone has them all. Subjects who do not reach stages e and f generally are not benefited. They have few pleasant memories of the experience and are not eager to repeat it. Subjects who reach stage e, or f, have had the psychedelic experience.

Stage Two of Psychedelic Research

In stage one of LSD research, no especial effort was made to control the environment of the patient undergoing therapy. Hospital rooms or psychiatrists' offices were used and there were many environmental distractions which interfered with the patients experience. The first group to take these factors into account was that of Maclean, MacDonald, Byrne and Hubbard (1961) who prepared specially designed settings and aids. They used comfortably furnished rooms free of distractions. Visual aids to ameliorate and enlarge the experience were used. They included photographs of members of the family, reproductions of works of art and music. Further modifications were made by the International Foundation for Advanced Study which built treatment rooms to enhance the psychedelic experience. The results of this research have been reported by Sherwood, Stolaroff, and Harman (1962), Harman (1962, 1963, 1963a), Savage, Harman, Fadiman and Savage (1963).

Sherwood, *et al.,* (1962) corroborated the psychotherapeutic value

of the psychedelic experience, and described its dynamics as being divided into three stages. Stage one (the evasive stage) is a condensation of Chwelos, *et al.,* stages a to d. Stage two (the symbolic stage) equaled Chwelos, stage e. Sherwood's stage three can be compared to Chwelos, stage f. This is the stage of immediate perception. They described it in part, as follows: "He [the subject] comes to experience himself in a totally new way and finds that the age-old question, 'Who am I?' does have a significant answer. He experiences himself as a far greater being than he had ever imagined, with his conscious self a far smaller fraction of the whole than he had realized. Furthermore he sees that his own self is by no means so separate from other selves and the universe about him as he might have thought. Nor is the existence of this newly experienced self so intimately related to his corporeal existence.

"These realizations, while not new to mankind, and possibly not new to the subject in the intellectual sense, are very new in an experimental sense. That is, they are new in the sense that makes for altered behavior."

The papers by Harman are recommended for those interested in the philosophical aspects of the psychedelic controversy.

Stage Three of Psychedelic Research

In stages one and two, double-blind comparison studies were not used for evaluating the efficacy of psychedelic therapy. Theoretically it is impossible to run comparison groups for testing the psychedelic treatment. There is a good deal of evidence which suggests that it is the experience itself and not the drug which is the therapeutic factor, provided that the experience is long enough. Mescaline and LSD produce experiences of from 6 to 18 hours and both seem equally effective. We preferred LSD because of its shorter duration of activity. There is some evidence that the short experiences induced by psilocybin or dimethyl tryptamine are not as effective—perhaps because the experience is too short and thus not so firmly impressed in the memory or in consciousness. Any drug which produces a psychedelic experience should therefore be as effective as LSD. If intravenous amphetamine, for example, were selected as the control drug, and if the entire therapeutic session were run as if a psychedelic experience resulted, then no comparison would be possible. One merely would have a comparison between two sets of psychedelic experiences. If the comparison drug produced no experience, this would soon become known to both subject and observers and no double-blind study would be possible.

Stage one and two investigators were aware of these difficulties but not deterred from their efforts. The demand for double-blind studies simply shows ignorance of the nature of the LSD experiences. Stage one and two investigators discovered a wide variety of variables that can be controlled to a greater or less degree. Stage three investigators have profited from these studies, and have begun large scale trials, especially at Spring Grove State Hospital.

The psychedelic controversy has forced many investigators to issue cautionary statements with which to cloak their valuable studies. Thus

Unger (1964) quoted Dr. F. Kelsey: "We really don't know the answers about LSD 25. Its harmful potentialities have not been fully explored and its potential benefits are not known." Dr. J. Cole stated, "The psychotomimetic agents, LSD 25, mescaline, and psilocybin are capable of producing a variety of intense and bizarre perceptual and emotional experiences in human subjects. They are claimed, but have not been proven, to be effective in producing dramatic therapeutic changes in such highly treatment-resistant conditions as chronic alcoholism. Their reported efficacy in such serious, highly treatment-resistant psychiatric conditions requires careful evaluation and rigorous scientific study." Finally, Unger gave, as his own opinion, this statement: "Not a single, methodologically-acceptable controlled study of psychedelic drug-assisted psychotherapy has yet been performed." Such comments illustrate the extreme fear regarding LSD therapy felt by reputable scientists who are forced to issue pesudo-scientific statements in order to hide their desire to work with these compounds.

MAJOR VARIATIONS IN LSD THERAPY

Therapists Also Taking LSD

Some of our investigators hypothesized that if the therapist took LSD at the same time as the patient this would produce a much closer therapeutic relationship and consequently would improve the therapeutic value of the experience.

Calder (1963) conducted an independent investigation of the results of LSD therapy carried out by four of our treatment centers. This follow-up study was conducted independently of any of the treatment centers. A sample of 150 alcoholics (from about 450 treated) was followed-up very carefully and thoroughly. One of Calder's groups used the approach described earlier. The follow-up period spanned five years beginning October 31, 1957. The length of time following the last treatment varied from five years to two months. Most cases were treated 2-4 years before follow-up was made. The results of this study are shown in Table 3.

The following categories of improvement were used:

a. *Dry:* subjects totally dry; no relapses since last treatment.

b. *Improved:* subjects still have occasional relapses, but continue to seek sobriety. In some, the periods between bouts were becoming longer; gainfully employed as compared to former chronic unemployment.

c. *Unimproved.*

Group A consisted of patients treated by a two-man team who took LSD with their subjects. These were usually out-patients, day patients or those who stayed overnight only. The recovery rate was 22 percent.

Group B was treated at Saskatchewan Hospital, Weyburn, by Jensen, who directed the program in a ten-bed pavilion for 20 months (1961-

TABLE 3

Comparison of Treatment of Alcoholics with LSD at Four Centers in Saskatchewan

	A Special group with therapists taking LSD during treatment.	B Saskatchewan Hospital, Weyburn; Jensen, Osmond	C University Hospital, Saskatoon; Hoffer, Smith	D Moose Jaw Union Hospital; O'Reilly	Total
Number	24	65	32	29	150
Dry	5	22	13	10	50
Improved	0	9	7	3	19
Unimproved	18	31	11	16	76
Unknown	1	3	1	0	5
Percent improved and dry	22	50	64	45	48

62). The patients included a very high proportion of difficult cases with poorer prognosis and more treatment failures than any other group. Most of the patients were committed to hospital and stayed there 6-8 weeks. The recovery rate was 50 percent.

Group C was treated at University Hospital under my direction. They were all voluntary patients who stayed in hospital 4-14 days. Very little psychotherapy was used before and after the experience. The recovery rate was 64 percent.

Group D was treated at the psychiatric ward, Union Hospital, Moose Jaw, Saskatchewan, under the direction of Dr. P. O. O'Reilly. At this ward, none of the therapists had ever taken LSD. This is an important point, since some writers have maintained that therapists who have taken LSD no longer are able to judge the results of therapy objectively. The Group D patients were in hospital 4-7 days, and were given some psychotherapy during their stay. The recovery rate was 45 percent.

Additional Comment

As it happened, most therapists involved in this project already had positive attitudes toward A.A., or developed such attitudes during the treatment-research program. Patients usually were encouraged to become associated with A.A. following treatment, and most who recovered did so. Many cases had had contacts with A.A. prior to treatment, without apparent benefit.

Some of the therapists encouraged the patients to report back, following discharge, if they felt disturbed and became fearful of drinking. Many patients did so and often were given one or more further LSD treatments. Generally, both patients and therapists reported that such "repeat" sessions appeared to reinforce sobriety and positive attitudes toward problems.

Following repeat treatment, many patients remained sober for several years up to the time of this report, frequently stating that their emotional distress and previous tensions seemed to have disappeared.

Some patients had LSD at more than one unit. In such cases, an effort has been made to list the cases with the unit where they had their last treatment.

In addition to the 150 alcoholics referred by the Bureau, and reported here, the psychiatric units concerned treated additional cases referred from other sources. Surveys are now underway to determine over-all results. In cases referred by the Bureau, an endeavor was made to follow the policy of preliminary screening and counseling by the Bureau. This involved contact with patients by Bureau staff during in-patient stay, and follow-up therapy including counseling and help with rehabilitation problems. Occasionally the Bureau was able to provide follow-up assistance to ex-patients with no previous Bureau contact who had been referred for treatment by other agencies.

It should be noted that as this experimental treatment program developed, the investigators gradually evolved new treatment theories based on cumulative experience in this heretofore unknown area. There was continuing comparison of experience along the general guidelines regarding treatment techniques. A system of precautions was worked into the method, and certain protective measures were introduced to insure against possible adverse reactions and to avoid chance of harm to the patient.

In presenting statistical material, Mr. Angus Campbell, senior counselor at the Regina Counselling and Referral Centre, said: "It should be pointed out that we were purposely conservative in making our counts. In cases of doubt, we made it a rule to mark the results negative. We therefore feel that a careful re-check might indicate somewhat higher rates of recovery than our tables show."

Group A, patients treated by therapists who had taken LSD with the subjects, fared worst. Only five, or 22 percent, had remained sober, and the rest received no benefit. Several of this group later came to University Hospital for treatment and reported that, because of the therapists' experience with LSD, they had felt left out of the treatment. Evidently the therapists under LSD were not able to attend to the needs of their patients successfully. The other three groups had comparable improvement rates. The probability that the differences between Group A and the other Groups are due to chance is less than one percent.

Penicillamine and LSD

I was following the hypothesis that one of the ways LSD acted in the body was by increasing the concentration of adrenochrome. Penicillamine reacts with adrenochrome in vitro to produce indole derivatives which we have found to be non-toxic in man. I developed the idea that pre-treating a normal subject with penicillamine for a couple of days could protect the subject against a normal dose of LSD; the adrenochrome would be removed by the penicillamine as quickly as it would be formed. To my great surprise, the subject experienced the usual perceptual and thought changes, but she was completely without affect. This was reported by

Hoffer and Callbeck (1960). Here follows her own account of the penicillamine-LSD combination experience.

> Towards the end of the hour I became restless and more sickened by the horrible odor. During the second hour, I began feeling quite cold and I think I remained cold until about noon. When I closed my eyes I envisioned mounds of ulcerative, decaying flesh. I felt it strange that this imagery should not be repulsive to me, or frighten me; I merely noted and reported it. This imagery came in waves for a short time and seemed to me to relate to the odor. Following this, I noted very slight visual changes, mainly in lighting and depth perception within the room. Music was playing and I was aware of it, but not responsive to it. I remember remarking that when Mexican music was played I would expect to imagine fat, paunchy little people, but this was not the case now. It became a bit difficult for me to think clearly, but there was no over-all time distortion. About one-and-a-half hours after I took the LSD 25, I began having marked visual distortions which I associated with former LSD experiences.
>
> The striking differences were these: they were not preceded by the usual shimmering effect; they were clear-cut distortions of pattern and depth rather than an effect superimposed on a surface; the distortions did not take the form of human beings; and they elicited no emotional response from me. As these changes became more marked, I became unaware of the odor, and of my body. During the next hour this visual flow was very striking and fast-moving. Music played throughout and I was quite aware of it, but not involved in it in any way. When I looked at the record turning around I saw spots of dust jumping up and down. I was asked to try to leave my body but this I could not do. I was entirely unaware of my body, I could neither feel nor imagine. It seemed there was no "me"; I did not exist. During this time the experience consisted of one area where visual changes were occurring and one area where music was being played. There was no relation of one to the other, and I was merely an instrument, noting these facts like a camera making an impression on a negative.
>
> Shortly after noon I could make out an animal from a distortion of the drapes and I commented on this, saying I was coming out of it. Soon after this I could make out two people leading a horse and for the first time I had a fleeting surge of feeling (interest) and thought my emotions would return. I said I was definitely coming out of the experience and waited for a flood of emotions. The visual flow slowed down. I became aware of my body and aware that I now was warm. (I had wrapped myself in a blanket in a most uncomfortable position, so I now removed it and made myself comfortable). During the next half-hour the two areas became three areas—visual, sound and body—but there was no harmony between them and each existed as a separate entity. One of the visual effects that was most marked now was a distinct stroboscopic effect of movement. I had never seen it to this degree before. I commented upon it as a neutral observer would.
>
> Between 1 P.M. and 2 P.M. I became aware, once more, of the unpleasant odor but it did not overpower me as earlier. I noticed it mainly when I voided. The visual flow subsided but detail stood out

very clearly still. I was given 1 gm of nicotinic acid by mouth which I took automatically; I had protested vehemently on previous occasions when I had had LSD 25. The flush that followed was not unpleasant. In fact, I was unaware of it unless my attention was drawn to it. It lasted an unusually long time and I remember when I got ready for bed, at about 6 P.M., I noted my body was still flushed. (My normal flush from nicotinic acid lasts about one hour). During this period I knew my emotional tone had not returned. I tried to visualize the faces of my friends, as I normally can when I think of them, and have always been able to do in previous LSD 25 experiences, but was totally unable to do this.

Following this, I began to have a feeling of uncertainty as to whether or not I had been the one who had the experience. The visual changes had lessened considerably, but I was still without feeling. This did not worry me at all. I merely reported it as unusual. It became necessary for me to produce another specimen of urine for the laboratory but I was unable to do this, and this too I found strange. I was given a cup of coffee which tasted like coffee and an egg sandwich which I could identify as egg but otherwise was not tasty. I consumed this lunch automatically. I still found it hard to comprehend conversation directed toward me, but followed orders like an automaton. I began to feel chilly again and this continued until I went to sleep that night. At no time did I recognize myself as feeling tired, which is quite unusual for me following a long LSD 25 experience.

Later, I was taken to a friend's home for supper—part of which I consumed. While there, I could correctly identify the feelings of those around me, but was not able to respond to them. I felt confused by so many people and so much activity, so I quickly gave up eating and asked to be taken home.

Many years before, this subject had recorded an experience with LSD only. It was very different from the one reported above. She wrote about it as follows:

During this period [the onset], I experienced some anxiety, irritability and slight euphoria. Some nausea of a butterfly type was noted but it did not last very long.

During the next two hours, I was subjected to a variety of nursing approaches. When I felt comfortable with the nurse, the room seemed very bright and at times there seemed to be a lovely orange halo around the nurse's head. When I felt rejected and threatened, the room would appear cell-like with very drab colors. On one occasion, the nurse assumed the appearance of an animal, and when I looked away from her and at my knees, I too seemed to turn into another animal, with whiskers growing out of my mouth. This terrified me, and I seemed to be wandering around lost in a long tunnel through which the wind was howling. I felt this lasted an eternity when in reality (according to the tape recording) it lasted under a minute. My mood changed quickly but was appropriate to the situation as I experienced it.

The lighting in the room was changing constantly, as well as the dimensions. My perception of depth shifted fluidly. Flat surfaces often

changed so that I saw what looked like the basic structure of the material. At times a fly which was actually in the room would become a swarm of them in flight. This occurred in the third hour and eventually I came to realize there must be a fly present because a single one would light on an object but none of the others ever did.

My concept of time was disturbed; the day seemed to cover years. My thinking was very concrete and quite paranoid at times. Blocking was apparent during the height of the experience. I was disoriented as to place and person on only one occasion as mentioned above. My emotions were highly responsive. I communicated verbally with the observers very little, perhaps things changed too rapidly for me to give a coherent account, and perhaps because of the unpleasant nature of much of the experience.

During the fifth hour, the experience receded in waves. It was suggested that I take nicotinic acid, 1 gm, by mouth, to terminate it more quickly but I refused. I had a tingling sensation all over my body and felt that the effects of the nicotinic acid would heighten this even more. I was still slightly paranoid on occasions and my mood tended toward mild depressions.

When this subject took LSD again, two years later, she responded with a typical, positive psychedelic experience. She recorded that experience as follows:

... Music was playing, which I found interesting and enjoyable. I found no anxiety and was quite relaxed, no nausea was present.

Fifty minutes after I took LSD 25, my right hand appeared to change in size and texture. When I looked at reproductions of oil paintings the flowers seemed to be sculptured, in clear harsh surfaces. I could see no beauty or life in them. The lighting effect in the room was heightened but there was very little disturbance in depth perception. My mood remained pleasant and I found the experience interesting.

About one and one-half hours after the start, I was really into the experience, and it remained intense for the next two hours. I was asked to look into a mirror and I saw my image change gradually into that of an older and older "me," until eventually I seemed to get right into the mirror and look out from there. When I looked at paintings of people, they got older, then younger. Occasionally I was completely engulfed in a portrait. I found the paintings fascinating; landscapes were beautiful beyond description, very much alive, and produced a tremendous amount of emotion in me.

When I looked at the people in the room with me, changes occurred in them. One person's face became older, then he changed into an Egyptian. Later a mosiac pattern formed over his entire face, except for one cheek which bore a shield. Sometimes a further change occurred and he resembled a Zulu warrior.

I was able to travel back in time and saw myself at different ages in my family setting and was quite surprised by some events I saw taking place.

I traveled in space to various parts of the world, to other planets and to the bottom of the sea. I found this most interesting and enjoyable. I was tremendously impressed by the comprehensiveness of the

universe and the insignificance of the human being with his petty problems.

During these two hours, time had no meaning for me. I was bound by neither time nor space.

Parts of a tape-recording of the chanting and drumming by Indians of the Native American Church of Canada, performing a peyote ceremony, were played for me during the fourth to fifth hour. While I listened, symbolic pictures formed (it made no difference if my eyes were open or closed) through which I felt I could interpret the messages of the drums and the prayers. My emotions corresponded to my interpretation and I was tremendously moved by the whole ceremony.

Time was unimportant to me. I seemed to live a lifetime in seconds. My thinking was very clear. I was never disoriented as to place or person. At no time did I lose sight of the fact that I had taken a drug which had induced this "amazing" experience. I was able to communicate freely to those present what I saw and felt.

During the fifth hour the experience receded in waves. I was somewhat introspective, but at the same time could readily relate to those around me. I felt bathed in a warm glow. I was tired but happy. Music was played most of the time and I was very responsive to it.

I went to a friend's house for supper and enjoyed the company. I ate only a small meal because I was not really hungry. I told my friends about the experience and we were all very gay.

The chief difference between the experience induced by LSD only, and the penicillamine LSD experience, was the complete absence of affect in the second. The first LSD experience was characterized by irritation, fear, depression and warm affection. The second, which took place in an altogether different setting, and with a different objective, was characterized by relaxation, warmth, friendliness. An abundance of warm affection was present. The penicillamine-LSD experience had all the visual and thought changes, but was without affect.

After I had recovered from the shock of seeing the effects of penicillamine-LSD on a senior research worker, who became psychotic for two weeks, I saw the possible importance of developing further the application of this combination of drugs to patients for the purpose of producing an affectless state. This would be highly undesirable for normal people who are accustomed to normal changes in mood, from mild depression to mild euphoria, and to occasional, appropriate violent excursions into deep depression or intense euphoria. But for some people, already suffering from violent and prolonged states either of depression or of tension, the combination might be valuable in enabling them to reduce their mood swings to a more even level.

Many alcoholics have violent mood swings from which they seek relief in alcohol. We have known several alcoholics who relapsed when very depressed and again when very euphoric. A research project, therefore, was begun to test the hypothesis that alcoholics treated with penicillamine-LSD would respond better than alcoholics given a methedrine intravenous abreaction. It was predicted that the penicillamine-LSD group would show

a better response than our usual LSD-only treatment, or about 75 percent recovery, whereas the methedrine experience would benefit a very small proportion and would be considered our comparison group.

Patients were admitted to University Hospital in the usual way. They were given a complete physical examination and, if drunk or sick on admission, were treated until they were well. After a detailed psychiatric examination and diagnosis, LSD 25 was offered to them as a treatment. During this phase of our alcoholic treatment program, LSD had become well known to our community of alcoholics from which this sample was drawn. Schizophrenics, malvariacs, and endogenous depressives were excluded. No alcoholic who had previously been given LSD was included. As soon as a patient was ready he was given either 30 mg of methedrine intravenously, or penicillamine for two days followed by 200 mcg of LSD. The selection of patients was made from a set of random numbers laid out before the study began. In each case the patient thought he was getting LSD. Usually there was only one patient at a time on the ward engaged in this project and there did not appear to be any contamination. The therapist was Research Psychiatrist Dr. Groenendijk, who carried out the therapy and followed up on the patients. He, of course, knew which drugs were given; it was a single-blind treatment. (As we have already pointed out, no double-blind was possible.)

The results of this project were surprising; they are shown in Table 4. There was no significant difference between the groups and results with both groups were markedly inferior to the results of our previous and present studies by Smith, Jensen, Chwelos, O'Reilly and others. In two years the 14 subjects having had methedrine required 11 re-admissions. Thirteen penicillamine-LSD patients required 11 re-admissions.

TABLE 4

Comparison of Methedrine and Penicillamine-LSD Treatment of Alcoholics

M Treatment	Number	Much Improved	Improved	Unimproved
Methedrine	14	3	1	10
Penicillamine LSD	13	2	0	11

It was clear that the combination penicillamine-LSD was not more therapeutic than methedrine abreactions for the treatment of these alcoholics, and it seemed likely these controlled results would not be significantly better than chance. This was surprising, and much at variance with our previous penicillamine-LSD work on alcoholics.

Before this study was started, we had used penicillamine-LSD only with severely tense alcoholics who already had had LSD at least once, usually several times, but had not responded. They had experienced the psychological benefits to be gained from the LSD but still were alcoholic. Their level of tension was so enormously high that insight alone seemed useless. As a group they had responded very well to the combination. The present group had never had LSD-only, and included tense, and less tense alcoholics. The major differences were: (1) none of the present group had had a psychedelic experience with LSD; (2) penicillamine prevented

them from having a proper affective response to LSD; and (3) the first group had acquired insight with the LSD experience.

This suggests that the LSD experience without affect is of little value therapeutically for alcoholics. Observations by O'Reilly and Funk (1963) support this conclusion. Penicillamine-LSD should be reserved for alcoholics who already have had the LSD experience, preferably several times, and who are not able to tolerate sobriety because of excessive tension. Methedrine has been used for many years as a chemical way of mobilizing affect and in many subjects produces marked abreactions; but the results with methedrine were not good. LSD combines in its experience the proper relationship of perceptual and affective change. Methedrine mobilizes affect but produces an inadequate perceptual change. Penicillamine-LSD produces an adequate change, but with the absence of affect.

The following case represents, in our view, the proper way of using first LSD and later penicillamine-LSD as a treatment for alcoholism.

Mr. W. H.

This patient, age 38, was committed to a mental hospital in November 1958 as an alcoholic. He had started to drink at 18, continued throughout his Air Force career, and about five years before admission his drinking had become uncontrollable. He consumed about 25 ounces of whiskey daily, had suffered innumerable blackouts and bouts of tremor, and had been discharged from five jobs because of drinking. He believed severe tension was the chief reason for his drinking. On examination his mental state was found normal. He was very tense. He was given his first LSD treatment and discharged.

In April 1959, he again was given LSD, 300 mcg, in a joint session with two therapists who also had taken LSD. The subject believed he gained more from the second session.

He remained sober for some time. In June 1959 he was readmitted; he was severely inebriated with marked tremor. After he recovered, he received a third treatment with 200 mcg of LSD. This time he achieved a transcendental experience and had a feeling of oneness with God and man. On July 4, 1959, he was given his fourth treatment with 100 mcg of LSD. This was an elective treatment. After the third, he had remained sober but had been very tense. During the fourth session he experienced several hours of remorse and depression. On July 9, 1959, he took LSD together with his wife. He received 200 mcg and his wife 300 mcg. The joint session did not go well and there was closure of the relationship of the couple.

By July 23, 1959, he had been drunk one day; his relationship with his wife had not improved. He was again admitted drunk in November 1959 for three weeks. He was given his sixth LSD experience in hospital, with 600 mcg followed in one and one half hours by 300 mcg. He had an intense, insightful experience.

A few months later he was again committed to a mental hospital. He was discharged in March 1960 and came to Saskatoon where in April he was discovered in a hotel very ill and nearly unconscious. He had consumed a huge quantity of alcohol in a few

days. He was treated vigorously with nicotinic acid until he recovered. Then he was given penicillamine, 4 gm per day, for two days and then 300 mcg of LSD. He had an LSD experience which was similar visually to his earlier ones; he received no therapy. Most of the time he found the experience very flat. He was discharged April 18, 1960.

A few days later he found another job and remained sober for two months. This was the first time in many years that he had been sober and free of tension. He was involved in the problem of reestablishing his family life. His wife and children had been living on Social Aid in a room in another city and he commuted there every week-end. His wife had not accepted his sobriety nor did she believe it would last. June 26, 1960, he became extremely tense and drank 13 ounces of liquor. He then became frightened, and called me. I started him on nicotinic acid for a few days. One month later he had a second one-day relapse and after that remained continuously sober for over two and a half years. At present he is a partner in a successful business, is reunited and getting on reasonably well with his wife, and is an active and dedicated member of A.A.

On a recent visit he described his last LSD experience as one which left him emotionally flat for several months. Previously he had been subject to violent swings in mood from intense tension to intense euphoria. He found both states most unpleasant and used alcohol to dampen these feelings.

MALVARIA AND LSD

The disease alcoholism is defined as the act of drinking excessively. It may be due to a variety of reasons or even diseases which can underlie this act. Clinicians have been fully aware of this and have made many serious attempts to classify alcoholism according to these other factors or diseases. This has been, and still is, difficult because clinical methods for diagnosing are inherently imprecise; subjective methods do not have the same precision (reliability and validity) as laboratory tests. The natural history of the disease concept in medicine shows clearly that there has been a steady subdivision of broad heterogeneous groups into smaller more homogeneous groups. In each case it became possible to divide the larger groups because laboratory tests had been developed. Many homogeneous groups were then diagnosed operationally and there was a steady refinement of signs and symptoms to syndromes to precise diseases. Thus the syndrome cough, pain in the chest and fever became tuberculosis or pneumonia of a particular sort depending upon the results of specific laboratory tests. In effect, syndromes are used primarily to indicate which laboratory tests should be used, and frequently the laboratory tests alone are adequate to establish diagnosis even when no syndrome is present.

Alcoholism, unfortunately, is still a syndrome since no laboratory tests are known which subdivide the syndrome into more homogenous groups. The subdivision into depressions, neuroses, psychopathies and schizophrenia is a slight improvement, but since these diagnoses are them-

selves clinical impressions (skillful guesses, for to diagnose is to guess) there is little gain in accuracy or precision.

The Disease Malvaria

Many different chemical substances are present in urine from norma] subjects and from subjects either physically or mentally ill. But few biochemists are prepared to examine large numbers of urines for any particular substance (or even family of substances) in the hope one will be present less frequently, or in smaller concentration in normal subjects compared to other diagnostic groups. What is required is a reason for examining for a specific group of substances. This was the line of reasoning which led to the isolation by Irvine (1961) of substances rarely present in normal subjects, from schizophrenics' urine. It was postulated that d-lysergic acid diethylamide produced not only a clinical but also a biochemical model of schizophrenia; that LSD would lead to the excretion of the same abnormal substances in normal subjects which were assumed to be present in schizophrenics' urine. Urines were, therefore, obtained before and after giving alcoholic patients LSD treatment.

The urines were analyzed chromatographically with techniques less apt to destroy unstable or reactive substances by oxidation, etc. Very soon it was found that the systems developed by Irvine demonstrated certain mauve colored spots in the high *Rf* region after LSD administration. When it was clear this was not LSD or its direct decomposition product the same procedures were applied to urines from various psychiatric groups. Irvine (1961) found that this mauve staining substance was present more frequently in schizophrenic patients than in any other group. His detailed examination of the substance led him to believe it was a pyrolle but it still remains unidentified. Using a slightly different method which seems to pick up fewer substances, Hoffer and Mahon (1961) found that similar mauve staining compounds were also present more frequently in schizophrenic urine than in any other group. Irvine's (1961) substance extracted from schizophrenic urine was used as the standard reference compound.

The Hoffer and Mahon method was taught to a laboratory technician who then installed a laboratory at the Saskatchewan Hospital, Weyburn, under Dr, H. Osmond, then medical superintendent. The results obtained were similar to those found in University Hospital. Since the technique at these two laboratories was identical I have pooled all the results. The following groups of psychiatric patients were examined and of these a certain proportion had these substances in their urine, (see Table 5.)

At the same time Hoffer and Osmond (1961) developed a simple card-sort test for assisting in the diagnosis of schizophrenia. This test (hereafter HOD test) consists of a set of 145 cards, each card containing a question which the patient answered by placing it in a box marked "True" or "False." Scores were obtained by recording the cards placed in the "True" box. Questions were so framed that schizophrenic patients would declare many more of them to be true than would any other

TABLE 5

Group	Number	Percent of group who had Mauve Factor in urine
Schizophrenia		
(a) Acute	110	75
(b) Treated and recovered	28	0
(c) Treated and not recovered	140	50
All neurotics	121	27
All alcoholics	42	33
Physically ill adult subjects	40	2

except the toxic psychoses. Questions dealt with perceptual changes, changes in thought and changes in mood. It was found that the HOD scores did relate in a significantly and very high degree to the diagnostic groups. Hoffer and Osmond (1961a) found that all subjects with the mauve staining factor in their urine had much higher HOD scores than diagnostic groups without it. The relationship of HOD scores to the presence of the chemical substances in urine, was in fact, much better than the relationship of either one to clinical diagnosis (Hoffer and Osmond 1962).

Thus two objective tests, one a chemical assay and the other a clinical psychological test, were highly associated. This increased confidence in the hypothesis that different facets of the same disease process were being examined.

Since all subjects who had these chemicals in urine resembled each other more than any other group, it seemed appropriate to drop the clinical criteria for diagnosing and to use the simple objective test. Hoffer and Osmond (1962) proposed the term "Malvaria" as a criterion for this group. Malvaria is present in any subject who has the mauve staining factor in his urine. Thus, referring to Table 5, 75 percent of the acute untreated schizophrenics had malvaria, etc. Twenty percent of the alcoholics tested also had malvaria. Hoffer and Osmond (1963) gave a comprehensive description of malvaria.

Comparison of Malvarian and Non-Malvarian Alcoholics

Over a three year period, 42 alcoholic patients were examined for the presence of malvaria. In every case first morning samples were taken a few days after admission and the samples analyzed. The results were recorded before the clinical assessment was completed. The HOD test was given by the nursing staff within a few days after admission. Tests were used if given a few days after admission, or if it seemed certain the patients were not intoxicated on the day of admission.

A comparison of the two groups of patients is given in Table 6.

Of the fourteen malvarians three were schizophrenic, using the usual clinical criteria. They were so diagnosed at other mental hospitals. Two

TABLE 6

Comparison of Malvarian and Non-Malvarian Alcoholics

Group	Number	Number male	Mean HOD scores DS	Per S	PS	TS
Malvaria	9	7	13.4	14.0	5.7	76.0
Malvaria only after LSD and rum fits	3	3	0.7	0	0	2
Non-Malvarians	28	26	5.5	2.2	2.3	22
Alcoholics (nontoxic)	95	89	5.3	2.4	1.5	20.4
Alcoholics (toxic)	29	26	8.8	11.3	4.1	60.0

DS Depression score
Per S Perception score
PS Paranoid score
TS Total score

alcoholics developed malvaria after being given LSD treatment and one had malvaria the morning after he had withdrawal convulsions. Of the twenty-eight non-malvarian alcoholics, only two were diagnosed as schizophrenic by any psychiatrist.

There were major differences in HOD scores. Malvarians scored higher on depression, on perceptual disturbances and on thought disorder. The three alcoholics who were transiently malvarian had very low scores and so resembled the larger group of non-malvarian alcoholics. This group did not differ significantly in any of the HOD scores from a much larger group of tested alcoholics who were not examined for malvaria.

A smaller group of alcoholics (29) were toxic from alcohol when admitted and tested; they were either drunk or had *delirium tremens.* Their urines were not examined. Their HOD scores were extremely high, as one would expect, since in toxic states there are major perceptual disturbances. Their scores were similar to schizophrenic scores.

HOD admission scores can be used to assess the degree of toxicity. High scores on admission, which go down very quickly in a few days, suggest the patient had been drinking heavily before admission (very common) or is developing, in, or coming out of *delirium tremens.* Daily HODs give one a good measure of the effectiveness of detoxifying measures. If, however, HOD scores remain high when the patient is sober and not suffering *delirium tremens,* then schizophrenia should be considered in the differential diagnosis.

All the subjects in Table 6 fell into three groups: (1) normals with very low scores; (2) non-schizophrenics (neurotics, depressions, etc.), non-malvarians, including non-malvarian schizophrenics, and non-malvarian alcoholics; these had intermediate scores; (3) schizophrenics, malvarians (which includes schizophrenics and non-schizophrenics) and alcoholic malvarians.

The malvarian alcoholics had the highest scores, even higher than schizophrenic scores. However, there were only nine in the group. Aleo-

holies malvarian after LSD are somewhat different. Larger groups will be examined to settle this point. In contrast, non-malvarian alcoholics did not differ from other non-malvarian groups.

Results of Treatment with LSD and Nicotinic Acid

If the excretion of mauve factor signifies similar biochemical dysfunction, then chemical treatment should be equally effective. About 75 percent of any group of malvarians are schizophrenic. Therefore, malvarians should respond as well to treatment given schizophrenics as do schizophrenics.

For ten years I have used massive doses of either nicotinic acid or nicotinamide as an important adjunct in the treatment of schizophrenic patients. See Hoffer, Osmond, Callback and Kahan (1957), Hoffer and Osmond (1962), Denson (1962) and Hoffer (1962, 1963). When this vitamin was included in a treatment program with other drugs and ECT, 75 percent of the patients remained well for ten years. A comparison group yielded a 35 percent ten-year cure rate. Schizophrenics not given nicotinic acid had the same prognosis as schizophrenics anywhere else; they tended to remain chronically ill; many killed themselves; many were repeatedly re-admitted to psychiatric wards or mental hospitals; and a large proportion became chronically ill in mental hospitals. Patients treated with nicotinic acid, however, did not commit suicide, had few réadmissions, and a much smaller proportion became chronic. Out of a hundred or more acute schizophrenics there have been hardly any failures. The treatment failures have come from the group who already had been treated over a period of years and had not recovered.

I, therefore, began to treat all malvarians with nicotinic acid and other therapies I use for schizophrenia, to test the hypothesis that alcoholic malvarians would respond better to such treatment than they would if treated simply as alcoholics.

Fourteen of the alcoholics had malvaria, eleven before receiving LSD and three only after LSD or during withdrawal after rum fits. Some of this group were treated with nicotinic acid. Others were not given the advantage of this treatment because they had been discharged before I decided to treat alcoholic malvarians as if they were schizophrenic. The group of malvarian alcoholics who were treated with nicotinic acid will be compared with those who were not. All of the group, except H.M., were given one or more treatments with LSD. The much larger non-malvarian group will not be discussed.

Alcoholic Malvarians Not Given an Adequate Treatment Trial

Several reports have been published which describe the method of using nicotinic acid. Patients are classified in treatment phases, with phase one treatment simpler than phase three.

Phase one treatment consists of a treatment trial of either nicotinic acid or nicotinamide, three gm per day for one month. This is carried out

on an out-patient basis. If alcoholics continue to drink there is usually no response. If the patient responds, he is continued on medication for one year. Those patients who are not improved, or who are not able to co-operate because they are too ill, or because they cannot stop drinking, enter phase two of the treatment program. The vitamin is continued at the same dose but in addition they are given a series of 5 to 8 ECT. It is possible some of the newer anti-psychotic drugs such as Triperidol, Tobin *et al.* (1964), might be combined with nicotinic acid to replace ECT. This possibility is now being examined in clinical trials.

Patients who fail to recover with this treatment are classed as phase three patients. They are continued on nicotinic acid, and given an additional short series of ECT and penicillamine by mouth, 2 gm per day, up to twelve days, or until they develop rash and high fever. For purposes of discussing treatment results I will consider no treatment adequate until phase three is completed, if it is needed; i.e. if a patient responds to phase one, he will not need the more intensive phases of treatment, but if he fails to respond, he will be classed under the "not adequate" treatment class. The reason for not completing the treatment was usually the unavailability of beds for further readmission and treatment.

Between March 1, 1960 and March 1, 1961, 40 schizophrenic patients were treated; sixteen required phase one treatment only; three were completely cured, while eleven were much improved (able to function well in the community but some symptoms still were present); two remained ill at home. Nineteen patients failed phase one and were given phase two treatment. Of these, ten were cured, six much improved, and three unimproved. Five who failed phase two were given phase three treatment. Of these, three were thereafter much improved; the remaining two were not. Of the entire group of forty, thirteen (32.5 percent) were cured, twenty (50 percent) were much improved and seven failed to respond. Thus 82.5 percent achieved a clinical state which was compatible with nearly normal life in the community. The seven failures were all patients who had been ill for many years, in the community, before they were treated.

Malvarians Treated Only With LSD

The first six patients to be described in this section had not received an adequate treatment trial and none are doing well (are sober). The seventh had had adequate treatment for several years, after which he discontinued his vitamin and six months later began to drink heavily.

Mr. D. A. Age 48, Married

Mr. D. A. began to drink at age 13 and two years later was a regular weekend drinker. At age 23 he was jailed for two years for theft while drunk, and had several other sentences for offenses committed while drunk. He was treated in a mental hospital for nine months in 1950-51 and thereafter was sober for 18 months. He had four more admissions to the same mental hospital by 1955. He was

in A.A., and sober, three years before his last hospital admission. Again he joined A.A. and remained sober for two years. After that, he never achieved more than six to eight months of abstinence. In December, 1961, he developed severe bleeding from his stomach, with a recurrence a year later. In the spring of 1963 he required two more admissions to a mental hospital. Finally on May 30, 1963, he was admitted to University Hospital for seven days. His mental state was normal and he was diagnosed as a chronic alcoholic. He received 300 mcg of LSD as a treatment. The next morning his urine had mauve factor. He was started on nicotinamide, 3 gm per day, and discharged. But he continued to drink, did not take the medication, and a few months later was sentenced to jail for offenses committed while drunk.

Mr. H. D. Age 36

This patient joined the armed services at age 17. When discharged in 1946 he was a heavy drinker. He was continually in trouble with his family over drunken behavior. He continued to get drunk at least once each week. In 1949 he again enlisted and upon discharge in 1953, married. He continued to drink heavily until 1958 when he joined A.A. and remained sober for two years. In mid-1960, while driving, he had a head-on collision with another car. This brought about the death of his mother. He began to drink heavily again and when admitted on January 2, 1963, he was consuming 26 ounces of liquor daily.

On admission, no changes in perception were found. His thinking was somewhat odd. He blamed himself for his mother's death and believed that had he not continued to drink the accident would not have occurred. He felt his neighbors also held him responsible and he would have liked a public hearing at which he could have been absolved. He was also very depressed. The diagnosis was reactive depression in a chronic alcoholic. His urine had the mauve factor.

Two weeks after admission he was given 200 mcg of LSD but he had a very moderate experience. He afterward felt he had gained some insight from it. For the following week he remained deeply depressed. To help him recover he was given nicotinic acid, 3 gm per day for six days. On discharge, February 4, 1963, he was cheerful, relaxed and optimistic. He was given 10 mg Dexamyl each day for out-patient treatment.

After discharge he remained sober for two-and a-half months until tension and depression increased. Four months after discharge he began to drink. He was admitted as an emergency but discharged himself the same day. He has continued to drink very heavily.

Miss M. M. Age 37

This patient began drinking about age 27. She had completed her university degree in social work. Her drinking gradually increased in intensity, and in 1960 she was involved in a car accident for which she was fined. Early in 1961 she came to Saskatoon for an LSD treatment, which helped her for only a few months, and later she was admitted to a state mental hospital because of intoxication. She

left against advice, continued to drink and was in another car accident. She was readmitted to the same state hospital after a suicide attempt while drunk. She then returned to Saskatchewan for another treatment with LSD. After discharge she again began to drink. I saw her in December, 1961, and found her to be schizophrenic. She refused to be admitted, so I started her on nicotinamide, 3 gm per day; but she continued to drink. Much of her schizophrenic symptomatology cleared but she remained severely depressed. She was admitted, May 31st to June 26th, 1962, for second phase treatment. On admission there were no perceptual changes, some paranoia was present but she was primarily severely depressed, dejected and suicidal.

She was treated with nicotinic acid, 3 gm per day, and received six ECT. Her depression lifted but she remained paranoid, bitter and hostile and discharged herself too soon. Phase three treatment could not be given.

Mr. D. U. Age 31

This patient completed high school and took a course in business administration. Although carrying out a responsible administrative job, he began to drink excessively under the repeated urging, he stated, of his superior. In 1957 he began to drink very heavily with repeated blackouts and bouts of *delirium tremens.* He was treated several times in a general hospital. His behavior became quite unpredictable and he was committed to a mental hospital for two months, late in 1960, as an alcoholic and a drug addict. There he received 200 mcg of LSD. He derived little benefit from the experience which he found very frightening. After discharge there was no let-up in his uncontrolled drinking and he was admitted a second time to a psychiatric ward, February 22 to April 11, 1961. Here he received one treatment with psilocybin, 15 mg, and two weeks later a second LSD treatment. He developed some insight into the relationship of his feelings to his drinking and appeared improved. Nevertheless, he continued to drink and to take large quantities of barbiturates. He was admitted the third time to University Hospital, August 7 to 16, 1961. The second day after admission he was exceedingly tense, complained he was going into delirium and that evening had one *grand mal* convulsion. The next day he had a second convulsion.

After that he slowly recovered, with no more seizures. He was treated with small quantities of sodium amytal, and 3 gm nicotinic acid per day. His urine contained mauve factor. He refused to take LSD again and was discharged. Since then he has required admissions in a psychiatric ward, November 3 to 4, 1961, and in a mental hospital, November 12 to January 22, 1961, where he again suffered from convulsions followed by severe *delirium tremens* with violent hallucinations and delusions (he did not receive nicotinic acid this time) and he showed much organic brain damage. He was admitted the sixth time to a psychiatric ward, December 29 to January 25, 1963, in much the same state. At no time was he benefited by this repeated series of treatments.

Mr. F. K. Age 45

F. K. was first admitted to University Hospital April 20 to June 18, 1960. There had been a change in his personality going back about eight years. He was very irritable, short tempered, and easily given to violent temper outbursts. He drank very heavily. When drunk he was aggressive and violent. One year before admission his drinking became excessive. He was admitted because he was threatening to kill himself. The urine test showed he had malvaria.

September 26, 1960, he was committed to a mental hospital with the same clinical condition and stayed there until October 15, 1960. After discharge, he was quite depressed for several months, but then he began to improve slowly. At follow-up he was working, felt much improved, was still drinking but not as much as before. His wife was quite content with his present state. His depression was lifted but he remained alcoholic.

Mr. A. D. Age 41

This case illustrates the response of one alcoholic to LSD and subsequently to nicotinic acid. Within two years after nicotinic acid was discontinued, he was re-admitted once, and two years later, again. A. D. was first admitted to a psychiatric ward in March, 1955, for two weeks. He had then been drinking heavily for three years. During this period he felt continually tired, bored and tense, and did not derive any pleasure from his work. He was discharged on nicotinic acid, one gm every day, which he took regularly until September 1956, when he decided he no longer needed it.

Two months later his drinking was becoming heavy again. He was unhappy over this and becoming nervous and tense. At the end of November, he was again started on nicotinic acid, 3 gm per day. In March 1957, he still was well. He had occasionally taken a drink but found that it did not taste as good when he took nicotinic acid. During the spring of 1957, he drank occasionally. He had not accepted the idea that he was an alcoholic and had a few bouts for several weeks. His wife was concerned because he seemed queer at times, and when drunk, became very aggressive.

He was seen in September 1957, and treated with Dexamyl, one tablet per day, and continued on nicotinic acid. In January 1958, he was well and had been sober for four months. May, 1958, he was still well; but then follow-up was discontinued and it was left to him to ask for more supplies of nicotinic acid. He did not take any more.

July, 1959, he developed a peptic ulcer and was examined in hospital. When discharged, he was very aggressive toward his wife and appeared to be intoxicated when, in fact, he had not been drinking. In December, 1959, he began to drink heavily again and was admitted to University Hospital, April 28 to May 9, 1960. Here it was discovered he had malvaria. His depression was treated with adrenaline methyl ether, a mild central stimulant (Page and Hoffer, 1964) and with psychotherapy. He was improved on discharge. A few months later he was very irritable. In March, 1961, he had a subtotal gastrectomy. In January, 1962, he was admitted to a general

hospital with generalized edema due to low plasma proteins. He continued to drink very heavily. He was admitted again May 24 to June 1, 1962, for another treatment with LSD, but has continued to drink excessively and on August 26, 1963, was seen again at the Alcoholic Counseling Centre.

Mrs. G. B. Age 39

G. B. was a shy, lonely person who began to drink very heavily about 1956. Her husband discovered this much later and then persuaded her to seek treatment. She did not have blackouts or *delirium tremens.* She was admitted August 28 to September 2, 1961. There were no perceptual changes, her thought content was paranoid and she was very tense. When drunk she often thought about suicide. On examination she was found to have malvaria. She was treated with 200 mcg of LSD and had a very mild emotional reaction. On discharge she was started on nicotinamide, 3 gm per day, for two months. She continued to drink, however, and did not take any more medication. At follow-up she was following her pre-treatment pattern of drinking.

Alcoholics Treated as Malvarians

The next two patients stopped drinking, one in A.A. and the other in jail, before they were given treatment. Phase one treatment only has been very helpful to them.

Mr. C. I. Age 31

This patient was a chronic alcoholic for many years. When drunk he would write bad checks which his father made good. He was first admitted to a psychiatric ward in July and August 1959, for LSD treatment. He was admitted to a mental hospital, November 24, 1959, for about one month for another treatment with LSD. He had an insightful experience but after discharge continued to drink and was admitted to the mental hospital again, on January 9, 1961, for two weeks. In between he had been in jail for six months for writing bad checks. Upon discharge from jail he immediately resumed drinking. During this admission to the mental hospital he received another LSD treatment. There was no change in his drinking habit.

He was given several more LSD treatments. After one session at the end of May, 1961, he had remained ostensibly under the influence of LSD for one week, when I saw him for the first time. He was very disturbed and described in detail the perceptual changes which were still present.

I started him on nicotinic acid, 3 gm per day, to bring him out of the experience and diagnosed him a pseudoneurotic schizophrenic. Two weeks later his LSD-like experience was gone. He discontinued nicotinic acid but began to drink again and was readmitted to a mental hospital in August, 1961. He discharged himself voluntarily and was admitted to University Hospital, August 29 to September 2, 1961. His urine was positive for mauve factor. It was discovered that a brother had been treated for schizophrenia. Because he was

malvarian and because of his prolonged reaction to LSD, he was advised not to take LSD again and on discharge was started on nicotinamide, 3 gm per day. But he continued to drink. On January 12, 1962, he was sentenced to jail for another two months for writing bad checks. He took his tablets for a brief period but after discharge resumed drinking, and in August, 1962, he was sentenced to jail for two years. For over sixteen months, while in jail, he has regularly taken the nicotinamide. This, with the enforced sobriety, has apparently produced a marked change in him as evidenced in his letters. July 11, 1963, he wrote, "I never thought that it could be possible to have the feeling of 'really belonging' and to have a purpose in life. It is like a jig-saw puzzle suddenly falling into place." He then informed me that he was applying for parole and he would seek psychiatric treatment during parole to help him stay sober and achieve maturity and independence. He was discharged May, 1964, and is still able to maintain his sobriety.

Mr. S. H. Age 45

This patient began to drink socially at age 20. During his army service, between 1939 and 1945, his drinking increased in frequency and intensity. He drank to the limit of his financial resources. After discharge, he drank less until 1952, when it was discovered that his wife had cancer. From that point on his drinking began to increase. From 1958 to 1960 he drank at least thirteen ounces of liquor each day for about one month and then remained sober one month. He at no time had blackouts or *delirium tremens.* In 1949 he was committed to a mental hospital where he stayed a short time.

He was admitted to University Hospital, April 18 to 27, 1960, where he received LSD therapy, modified by penicillamine (Hoffer, 1962). His urine contained mauve factor the next day. On discharge he began to drink heavily again and was admitted as a voluntary patient to the mental hospital, May, 1960, for seven weeks. He was given a second treatment with LSD. He remained sober for several months only and he was readmitted a third time to the mental hospital, in February, 1961, for one month and received a third treatment with LSD. But he continued to drink heavily during the rest of 1961. When he was demoted in his job, December, 1961, he stopped drinking and remained sober thereafter.

At this time I contacted him, not knowing what had happened, and interviewed him in January, 1962. He was still sober but was becoming exceedingly tense. He was quite disturbed and feared he would start drinking. Because of his malvaria I started him on nicotinamide, 3 gm per day. Three months later, he reported his emotions had leveled out, he no longer had extremes of being either too euphoric or too depressed, he was sleeping better, his personality was improved and the temptation to drink had decreased. December, 1963, he still remained well and sober.

The last group of five patients were all treated adequately. Of these, four eventually responded to treatment. The first two required phase one treatment only. The third required phase two while the last two required phase three treatment plus additional treatment elsewhere.

Phase one treatment

Mr. H. M. Age 67

Mr. H. M. became a heavy drinker during the first World War, while serving overseas. From that time on, he drank heavily the rest of his life but was able to consume large quantities and not show much effect from it. In 1952 he joined A.A. and remained sober for about nine months. After that he again drank very heavily. For three years before admission he had continued to drink as before, but his tolerance for alcohol had gone down markedly. He suffered many blackouts, many bouts of irritability and when intoxicated became very delusional and paranoid.

He was treated at University Hospital, August 2 to 11, 1960. He was found to have malvaria. Mentally he showed much evidence of senile deterioration. Because of both these findings he was not given an LSD treatment but started on nicotinic acid 3 gm per day. He was told the nature of his illness and advised not to drink any more. From discharge until April, 1963, when he died because of a coronary closure, he took the vitamin regularly, remained sober, was normal mentally and able to continue his job.

Mr. H. W. Age 44

Mr. H. W. drank excessively while overseas in service during the last war but it was more or less controlled until 1950 when he injured his back. This resulted in severe pain for one year and he consumed large quantities of alcohol and barbiturates. After an operation on his back, the pain was reduced but he continued to drink excessively. In 1959 he joined A.A. and remained sober. However, the pain in his back troubled him and toward the end of 1961 he began to use analgesics excessively. In the spring of 1961 he received one LSD treatment from which he derived a good deal of benefit. But he remained very tense with constant pain in his back which nearly incapacitated him. He became irritable and depressed and was in danger of losing his job. When seen in the fall of 1961 he was diagnosed as a pseudo-neurotic schizophrenic and was started on nicotinic acid, 3 gm per day. There was little improvement and it was essential to admit him February, 1962, for one month. He was continued on the vitamin and given four ECT. He was slightly improved on discharge.

For one month after discharge he seemed unchanged although he took his medication regularly. Then, over a period of a few weeks he recovered, most of the pain in his back disappeared and he became secure and happy in his job. In the spring of 1963 he requested and received another LSD treatment from which he derived more benefit, he believed, than from any of the previous sessions. He is still well.

Phase Two Treatment

Mr. D. S. Age 31

conflict with his father. His father later developed paranoid schizo-

phrenia which was cured by putting him on nicotinic acid, 3 gm per day. Until age 30 D. S. drifted about a good deal, then got a job in spite of his heavy drinking. He also had become involved with prostitutes and psychopathic women, one of whom he married. He was admitted to University Hospital, April 21 to 26, 1960. He had perceptual changes, with visual and auditory hallucinations, thought-blocking with paranoid ideation, and was anxious and tense. His activities were inappropriate. He was diagnosed pseudo-neurotic schizophrenia. He was given 300 mcg of LSD as a treatment. On discharge he was given nicotinic acid 3 gm per day, which he took regularly for one year.

He remained sober though tense and irritable for about four months and then began to drink again. He was admitted a second time, April 25 to May 13, 1961, and was given a series of five ECT.

He continued to take the vitamin regularly for 27 months after his second admission. During this time he remained sober but was plagued by a series of illnesses and misfortunes, most of them the result of previous decisions made while drinking. He continued to improve slowly and seemed better than he had been for many years. Late in 1963, he was very depressed and sought psychiatric treatment in order to have another LSD treatment. He had not started to drink again.

Phase three treatment

Mr. G. B. Age 36

Mr. G. B. complained of great tension, anorexia and insomnia for six to seven years. I first saw him September 29, 1959, when he had major perceptual changes, thought disorder and depression. He was diagnosed as having schizophrenia and treated with nicotinamide for two months with no improvement. He was, therefore, given 5:6 dihydroxy N methyl indole 15 mg per day for severe tension. Within three days he was well and remained so for four months until his depression returned. He developed severe abdominal pain. On laparotomy nothing wrong was found. On discharge he continued to drink heavily and was readmitted April 15 to May 21, 1960. He was then quite psychotic and received a series of eight ECT. He seemed well on discharge and remained well for about one month when he again became very disturbed. He went to a mental hospital, July 5 to 12, 1960, as a voluntary patient. He was readmitted July 15 to 24, 1960. There was no recurrence of his schizophrenia (he still remained mauve positive) and was given a penicillamine-LSD treatment for his alcoholism which was now well entrenched. A few days later he was drunk and seemed to go berserk. He threatened his family and was admitted as an emergency. He was given twelve ECT, continued on nicotinic acid, and given 2 gm penicillamine daily (Phase 3). When sober he appeared quite well but after discharge continued to drink and a few days later was committed to a mental hospital, September 1960 (second admission there). He was diagnosed as a paranoid schizophrenic and given long term care and treated with tranquilizers. Until April 7, 1962, he required three more admissions but since discharge May 11, 1962, has remained

sober and is now doing well at his work and is beginning to rehabilitate himself.

Mr. R. H. Age 41

R. H. began to drink at age 16. His behavior was unpredictable and aggressive. He continued to drink freely until 1958 when he first realized he was an alcoholic. He joined A.A. for nine months, then began to drink again and did so until about one year ago. In the meantime he had become a very successful author. In June 1962, his alcoholism became much worse and he developed deep depression. His wife could not tolerate his behavior and left him. For the next eight months he continued to have repeated attacks of severe fear and panic. He maintained he could only carry on by using alcohol. During this period he was in a mental hospital three times, once after a serious Suicidal attempt.

He arrived unexpectedly in early 1963, drunk, broke and alone. He was diagnosed as a pseudo-neurotic schizophrenic and started on nicotinic acid but could not stop drinking. He was admitted to University Hospital, February 25 to May 4, 1963, where he was treated with penicillamine-LSD.

After discharge he began to drink again and became deeply depressed and suicidal. He was still malvarian. He was admitted April 2 to 27, 1963, and given five ECT. The medication with nicotinic acid was continued. On discharge his depression lifted but a few days later he drank again and was committed to a mental hospital July 6 to 18, 1963. Since then he has continued to drink heavily in spite of two more admissions to University Hospital for further treatment.

A comparison of the two classes of malvarian alcoholics is shown in Table 7.

The six who had not received adequate treatment had been followed 38.2 months; each had four admissions and an average of 1.5 LSD sessions. None were sober at follow-up. The seven who received adequate treatment had a mean 49 month follow-up. They required 4.4 admissions (for a period one-and one-half times as long as the first group) but they have been sober nearly 72 percent of the time (the proportion of the follow-up time from achieving sobriety until December 31, 1964).

One patient not included in the table was much improved (sober most of the time) between 1955 and the fall of 1959. During this period he regularly took nicotinic acid, 3 gm per day. Then he discontinued medication. He was soon drinking heavily again and required two admissions in a general hospital and two admissions in a psychiatric ward between 1959 and 1962. I have not included him in the table because his treatment was adequate at first and then became inadequate in contrast to the other patients who continued with adequate treatment as needed. Had he been given nicotinic acid again in 1959 he might have been spared much difficulty.

I have included C.I. and S.H. although it is clear they were different. C.I. became sober only in jail where he had little access to alcohol (it is

TABLE 7

Results of Treatment of Alcoholic Malvarians

Patient	Treatment phase	Age	Months since first seen	Number admissions	Number treatments with LSD	Months sober to December 31/63
D.A.	1	48	21	8	1	0
H.D.	0	36	27	2	1	0
M.M.	2	37	39	5	3	0
D.U.	0	31	42	6	3	0
F.K.	0	46	58	2	0	0
G.B.	1	39	42	1	1	0
Mean		39.5	38.2	4	1.5	0
C.I.	1	31	55	5	5	30
S.H.	1	45	57	4	3	39
H.M.	1	67	50	1	0	50
H.W.	1	44	39	2	2	39
D.S.	2	31	58	2	1	45
G.B.	3	36	66	9	1	33
R.H.	3	41	27	8	2	0
Mean		42.1	49	4.4	2.0	35.4

possible to get alcohol occasionally in jail and several have continued to drink there) and S. H. was already sober when treatment was started. If they are removed from the calculation of means then the remaining group of five were sober the last 33.4 months out of a follow-up period of 48 months (69 percent of the follow-up period). The most striking difference was in the way the groups achieved sobriety. None of the first group, and 6 out of 7 of the second group, were sober at follow-up. No statistical test is required to demonstrate the significance of this difference.

Of the entire group of 14 malvarians, 12 received the kind of LSD therapy described by Chwelos *et al.* (1959). Only one of these, S.H., remained sober after his last treatment.

Had the malvaria diagnostic test not been available this could have been discouraging, for the improvement rate is certainly much less than would be expected from all the clinical reports from Saskatchewan. It can be concluded that malvarian alcoholics should not be treated with LSD alone. Assuming that 30 percent of any group of alcoholics are malvarian, then the theoretical maximum recovery rate after LSD therapy alone is about 70 percent. It is interesting that Jensen (1962) has, in fact, reported this recovery rate on a group of intractable alcoholics.

Smith (1958), in his original series of 24 alcoholics, included four psychotic patients. Only one of these was improved after treatment. In contrast, of the remaining 20, six were much improved and five were improved. The present finding with malvaria corroborates Smith's earlier clinical observations.

When the alcoholic malvarians were given the treatment program devised for schizophrenics (Hoffer, Osmond, Callbeck and Kahan 1957),

the statistics become reversed and eventually nearly all the failures after LSD become successes. This further suggests that malvaria is the more basic pathology in malvarian alcoholics but, of course, both conditions must be controlled. Malvarians who drink do not respond nearly as well to the treatment and the drinking must be controlled by treatment in hospital. Occasionally alcoholics who take nicotinic acid regularly while drinking are able to reduce their drinking very slowly.

Although malvarians do not respond to treatment with LSD unless the malvaria is adequately treated, it may be useful to give them the LSD treatment once the biochemical lesion has been controlled, for the insight has been beneficial for nearly all of the alcoholics so treated. It is advisable to start them on nicotinic acid the day after LSD. Nicotinic acid reduces the perceptual experience of LSD, (Agnew and Hoffer, 1955); (Hoffer, 1962). When given after LSD, it prevents prolonged reactions which are more common in malvarians than in other alcoholics. Thus H. D. and C. L. had prolonged reactions. This is most uncommon since alcoholics in general seem able to experience LSD with very little panic or anxiety. In fact, they seem to react to LSD in a more mature manner than neurotic patients. Perhaps their frequent experiences with alcohol, another psychotomimetic, has prepared them for the LSD experience.

Thirty-three percent of a group of 42 alcoholics tested for malvaria were found to have mauve factor in their urine. Alcoholic malvarians were quite different clinically and psychologically from alcoholic non-malvarians. Malvaria HOD scores were much higher and in the schizophrenic range. Non-malvarian HOD scores were much lower and in the neurotic range.

Alcoholic malvarians, treated with the nicotinic acid treatment program developed for schizophrenia, were nearly all sober at the end of the treatment. The period of sobriety occupied about 63 percent of the total follow-up period. Alcoholic malvarians who were not treated this way were all still drinking at follow-up.

Alcoholics should be examined for malvaria before they are given LSD. Malvarians should be first treated for their malvaria, then may be given LSD therapy, provided this is followed by nicotinic acid therapy, 3 gm per day for many months.

Malvarians' Psychological Response to LSD

In going over my data, it occurred to me that I could not recall one schizophrenic patient, or one malvarian patient, who had had a psychedelic experience when given LSD. They were treated the same way as other patients but apparently could not react in the same way. I, therefore, examined the LSD records of subjects who had been treated with LSD and whose urine had been examined for mauve factor. My impression was nearly correct. Out of 20 malvarians given LSD, four had a psychedelic experience. The result of this search of my data is presented here.

When LSD was given to patients at University Hospital records were kept of the patients' responses. These were of three kinds: (1) psychiatric nurse, assisting in the observation and therapy, wrote down

the patients' comments, discussion, etc. every few minutes throughout the day in a record which was placed in each patient's clinical file; (2) the psychiatrist also recorded his impressions in the same way but more commonly provided a summary of the experience; (3) the subject reported in his own writing his impressions of his experience. This was done several days after the LSD was given. All files contained the first two records but some subjects were not able to record their own impressions for various reasons. However, the first two records were available for examination in nearly all cases.

In no cases was the nurse or recording psychiatrist aware of whether the subjects were malvarian or not. In many cases this was not known to anyone, since urine assays were completed after the experience. The records were, therefore, as free as possible of any prejudice or bias, either for or against malvaria.

The records were read and the patient's statements describing his experiences scored. Any statement which indicated the subject was relaxed, happy, enjoyed the experience or was developing insight was scored as a positive statement. Any statements which indicated tension, pain, restlessness, fear, paranoia, reluctance to be given LSD again, etc., were scored as negative statements. A count was made of these positive and negative statements. All the subjects had psychotomimetic experiences; i.e. they all responded to the LSD. The usual minimal dose was 200 mcg and many were given 300 mcg. In addition, some achieved a psychedelic experience. The proof of this was in their records, in the psychiatric assessment and in their own statements the following day. The best evidence was their own description of having reached a psychedelic state as described by Osmond. Finally an assessment was made of the intensity of the perceptual changes.

When a subject is said to have achieved a psychedelic experience it does not mean he was in that state most of the time. Some subjects have it for a minute, others for several hours. The one-minute experience may be more vivid and striking than the longer experiences and may have a more permanent impact. Most of the recovered alcoholics come from the group who have had psychedelic experiences, but not every psychedelic experience is followed by recovery.

The number of positive and negative comments is not as objective as it appears because some statements are not clearly positive or negative. They are listed merely to indicate the relative number of statements. The records are available for inspection. Nor do I claim that other investigators reading these records would come up with exactly the same count. But there is no doubt that an independent count would yield quite similar results. These figures are merely an indication of the relative frequency of the positive and negative comments. In some cases, very few of the Patients could be classified.

Malvarians made many more of the negative statements. Only four achieved psychedelic experience. The mean number of negative statements per session recorded was 7.0 compared with 2.9 positive statements.

About half of the non-malvarians reached a psychedelic experience.

These patients made more positive statements than negative ones. This is not surprising since these statements more often merely confirm that the subject was enjoying the session. For the whole group the means for positive and negative statements were the same, 5 each. A few had psychedelic experiences even though most of the statements were negative and a few had many positive statements and enjoyed the experience but did not approach a psychedelic experience. My own first experience was of this kind. One of the subjects, G. B., had been treated successfully and her malvaria vanished. When she was given LSD, her urine was negative for mauve factor.

The difference would be much more striking if I had included a very large series of normal subjects. So far no normal adult has had malvaria in our studies and about half of the malvarians had psychedelic experiences. If this group were added to the non-malvarian group the differences between malvaria and non-malvaria would be significant beyond $P < 0.01$.

Malvaria and Undesirable LSD Reactions

Cohen and Ditman (1963) have ably described some of the undesirable reactions which follow unwise use of LSD by unqualified administrators. This has been rare in Saskatchewan. Over 600 subjects (chiefly alcoholics) have been given LSD over 2000 times with fewer than ten prolonged reactions (reactions lasting one week), and no suicides. None of the non-malvarians had adverse or prolonged reactions but four out of the 20 malvarians did have prolonged reactions. Out of 600 subjects about 1.5 percent had prolonged reactions and 20 percent of the malvarians reacted too long. Usually they will recover quickly from the residual experience when given at least 3 gm per day of nicotinic acid. Some of the prolonged reactions occurred in subjects who later were clearly schizophrenic and one had a chronic endogenous depression of seven years' duration. This data suggests that prolonged experiences to LSD occur primarily in malvarian subjects who should not be given LSD unless the therapist is prepared to cope with the consequences.

Malvarian subjects are less likely to have psychedelic reactions to LSD-25 and are not benefited by the experiences they do have as far as their alcoholism is concerned. There seems to be little indication for giving them LSD as treatment.

CRITICISMS OF LSD THERAPY AND REBUTTAL

Within a few months after LSD was introduced into North America the ideas generated by the LSD experience produced a good deal of criticism. The unhappy Harvard affair brought this to a boil and it spilled over into the popular press. Critics have been especially effective in creating a climate of opinion hostile to the use of LSD. There is an inverse square law that the degree of hostile criticism varies inversely with the square of the distance from any first hand experience and knowledge of the drug.

Thus, in Canada, the greatest resistance against LSD comes from the

TABLE 8

Non-Malvarians Response to LSD

	Sex	Psychedelic Experience	Number of comments on experience		Intensity of perceptual changes
			Pos.	Neg.	
J. A.	F	Yes	3	2	Moderate
G. B.	F	Yes	5	8	Marked
H. B.	M	No	0	6	Moderate
K. C.	M	Yes	3	13	Moderate
E. D.	M	No	0	17	Marked
O. E.	M	Yes	21	19	Marked
T. F.	M	Yes	11	6	Marked
M. G.	F	No	1	3	Mild
G. G.	M	Yes	7	2	Mild
J. G.	F	No	9	6	Moderate
E. H.	M	No	5	1	Moderate
O. J.	M	No	0	3	Mild
G. L.	F	No	9	49	Marked
K. M.	F	No	4	4	Moderate
S. N.	F	Yes	6	1	Marked
L. P.	F	Yes	1	5	Moderate
J. R.	M	No	2	0	Moderate
W. R.	M	Yes	16	0	Marked
P. M.	F	No	3	9	Marked
H. M.	M	No	3	0	Moderate
G. M.	M	Yes	9	0	Marked
F. S.	F	Yes	5	11	Marked
S.S.	M	No	2	4	Marked
L. V.	M	No	3	2	Moderate
J.W.	F	No	0	3	Mild
M. C.	F	Yes	8	2	Marked
A. H.	M	No	5	0	Marked
G.	F	Yes	7	0	Marked
S. L.	F	No	6	13	Moderate
Means	N (yes)		13	5	5*

* Omitting G. L.

professors who are least familiar with it. My criterion for familiarity is the number of research papers published in scientific journals.

The criticism seems entirely based on factors described by Barber (1961). These include: (1) substantive concepts and theories held by scientists at any given time; (2) an anti-theoretical bias; (3) religious ideas; (4) professional standing; (5) professional specialization; (6) societies, schools and seniority. The criticism has sometimes taken on a cultic attitude and there has been private circulation of papers unavailable to the general reader (Tyhurst, 1951). In addition, critics have issued public

TABLE 9

Malvarians Response to LSD

	Sex	Psychedelic experience	Number of comments on experience		Intensity of perceptual changes
			Neg.	Pos.	
D. A.	M	Yes	2	1	Moderate
G. B.	F	No	1	13	Moderate
G. B.	M	No	0	2	Moderate
H. D. *	M	No	4	15	Mild
I. G.	F	No	1	12	Mild
R. H.	M	No	Not available		Marked
C. I. *	M	No	Not available		Marked
A. K.	M	No	10	8	Marked
Z. K.[1]	M	No	0	6	Marked
M. M.	F	Yes	7	0	Marked
E. R.	F	No	2	5	Moderate
C. S.	F	No	3	10	Marked
D. S.	M	No	0	4	Moderate
D. W.	F	No	3	16	Moderate
M. W.	F	No	0	16	Moderate
L.Y.[2]	M	No	0	9	Marked
D. A.	M	Yes	5	1	Marked
A. G.	M	Yes	15	0	Marked
W. C.	F	No	5	20	Moderate
Mean	N (yes) = 4		2. 9	7. 0	

* Prolonged reaction to LSD

[1] Similar reaction three times

[2] Later diagnosed schizophrenia

pronouncements to press, radio and television which have not been based on published data. It is, therefore, important to list the criticisms and then examine them carefully in order to determine whether or not they need to be taken seriously. Before doing so I will quote Michael Polanyi (1956) because he states the case so well. If we are to convince our opponents of the potential value of LSD therapy we must convert them by exposing them to careful data, reasoned argument and a firm determination to do our work as we see fit and not to become their laboratory technician trying to disprove every will-o'-the-wisp they may conjure up. As Polanyi says:

> Scientists—that is creative scientists—spend their lives in trying to guess right. They are sustained and guided therein by their heuristic passion. We call their work creative because it changes the world as we see it, by deepening our understanding of it. The change is irrevocable. A problem that I have once solved can no longer puzzle me; I cannot guess what I already know. Having made a discovery, I shall never see the world again as before. My eyes have become different; I have made myself into a person seeing and

thinking differently. I have crossed a gap, the heuristic gap which lies between problem and discovery.

To the extent to which discovery changes our interpretative framework, it is logically impossible to arrive at it by the continued application of our previous interpretative framework. In other words, discovery is creative also in the sense that it is not to be achieved by the diligent application of any previously known and specifiable procedure. Its production requires originality. The application of existing rules can produce valuable surveys, but they can as little advance the principles of science as a poem can be written according to rule. We have to cross the logical gap between a problem and its solution by relying on the unspecifiable impulse of our heuristic passion, and must undergo as we do so a change of our intellectual personality. Like all ventures in which we comprehensively dispose of ourselves, such an intentional change of our personality requires a passionate motive to accomplish it. Originality must be passionate.

But this passionate quest seeks no personal possession. Intellectual passions are not like appetites; they do not reach out to grab, but set out to enrich the world. Yet such a move is also an attack. It raises a claim and makes a tremendous demand on other men; for it asks that its gift—its gift of humanity—be accepted by all. In order to be satisfied, our intellectual passions must find response. This universal intent creates a tension. We suffer when a vision of reality to which we have committed ourselves is contemptuously ignored by others. For a general unbelief threatens to evoke a similar response in us which would imperil our own convictions. Our vision must conquer or die.

Like the heuristic passion from which it flows, the persuasive passion too finds itself facing a logical gap. To the extent to which a discoverer has committed himself to a new vision of reality, he has separated himself from others who still think on the old lines. His persuasive passion spurs him now to cross this gap by converting everybody to his way of seeing things, even as his heuristic passion had spurred him to cross the heuristic gap which separated him from discovery.

We can now see the great difficulty that may arise in the attempt to persuade others to accept a new idea in science. To the extent to which it represents a new way of reasoning, we cannot convince others of it by formal argument, for so long as we argue within their framework we can never induce them to abandon it. Demonstration must be supplemented therefore by forms of persuasion which can induce a conversion. The refusal to enter on the opponent's way of arguing must be justified by making it appear altogether unreasonable.

Such comprehensive rejection cannot fail to discredit the opponent. He will be made to appear as thoroughly deluded, which in the heat of the battle will easily come to imply that he was a fool, a crank, or a fraud. And once we are out to establish such charges we shall readily go on to expose our opponent as a metaphysician, a Jesuit, a Jew, or a Bolshevik, as the case may be or—speaking from the other side of the Iron Curtain—as an "objectivist," an "idealist," and a "cosmopolitan." In a clash of intellectual passions each side must inevitably attack the opponent's person.

Here are the current claims made by critics:

1. LSD is a dangerous drug.

2. Long term personality changes can not be produced by LSD.

3. No good can come from a chemically induced delirium or psychosis.

4. LSD "has not proved to be effective or safe for any psychiatric condition" (Cole and Katz, 1964), because:

a. there are no detailed, carefully controlled studies designed to be free from possible distortions due to bias or enthusiasm;

b. explanations given often are formulations not common either to medicine in general or psychiatry in particular;

c. explanations have a mystical or philosophical sound which appeals to enthusiasts—but are likely to produce doubt or even violent disbelief and concern in physicians used to a more pragmatic approach;

d. the therapeutic process described may often have a bizarre—almost schizophrenic—component which tends to cause serious investigators to discount this whole area as a delusional belief shared by a group of unstable clinicians.

Please read Polanyi again.

The rebuttal to these criticisms is not difficult.

1. "LSD is a dangerous drug." Of course it is! So are salt, sugar, water and even air. There is no chemical which is wholly safe nor any human activity which is completely free of risk. The degree of toxicity or danger associated with any activity depends on its use. Just as a scalpel may be used to cure, it may also kill. Yet we hear no strong condemnatory statements against scalpels. When LSD is used as treatment by competent physicians trained in its use, it is no more dangerous than psychotherapy. It certainly is less dangerous than ECT insulin subcoma, or the use of tranquilizers and certain anti-depression compounds. Statements that LSD is dangerous really are meaningless as they stand. Every clinician working with LSD, who has published his data, uniformly agrees it must be used by physicians with proper safeguards for the safety of the patient. There are no known physical contraindications.

2. "Long term personality changes can not be produced by LSD." There is a curious quality about this criticism for, while it is generally denied that patients who experience LSD can be permanently changed, it is assumed, on the contrary, that psychiatrists, giving or taking LSD, very readily suffer permanent deformations of their own personalities. It is claimed that psychiatrists become overly enthusiastic, even delusional, and are no longer competent to judge honestly their own therapeutic efforts. It has even been stated that only claims made by therapists who have not themselves taken LSD are valid (see Cole, *et al.).* If this argument were accepted generally in medicine, no surgeon who had recovered from an acute appendicitis by surgery would be competent to judge results of his surgery on patients.

The claims of many authors that the psychedelic experience could

produce a permanent change in patients have been rejected by many psychiatrists whose orientation is psychoanalytic. It is basic to their belief to assume that each person has a stable personality which is altered with great difficulty. People become sick because their personality has been warped or not allowed to develop due to pathological relationships with their parents. The only sure way of changing these twisted personalities is by a thorough-going analysis of many years' duration during which all the roots of the pathological personality are uncovered and treated. Any other treatment, psychotherapy or drug therapy, is considered merely symptomatic treatment which leaves the patient superficially better. Obviously these psychiatrists cannot accept rapid, permanent personality changes. Another group are psychologists who have accepted the hypothesis that personality is a stable attribute of man.

This reluctance to believe that people can be permanently altered in a short time seems strange. History is replete with these sudden transformations as in religious and mass self-help movements. Alcoholics Anonymous originated in such changes. William James described many of them in "The Varieties of Religious Experience" (1902). Unger (1963) has given a particularly lucid account of the issue of rapid personality change. Maslow (1959) has described these phenomena as "peak" experiences and Sargant (1957) tried to abstract those factors which make man susceptible to these rapid changes. According to Sargant two factors are essential including a state of increased excitation in the subject's persuasion. He includes psychoanalysis as one of the conversion techniques along with religious conversions, etc.

Three techniques have been used for demonstrating permanent personality changes. These are: (a) clinical descriptions which include subjective statement by patients and clinical evaluation by their therapists (these have already been discussed in this review); (b) more objective questionnaires; (c) psychological tests.

McGlothlin (1962), and McGlothlin, Cohen and McGlothlin (1962) used questionnaires completed by subjects some time after they had experienced the LSD reaction. In the first study, McGlothlin was given access to a large volume of Janiger's (1959) unpublished data. The therapy groups claimed more lasting benefit than non-therapy groups. From the latter, artists claimed the best response. Of the four non-therapy groups the physicians-psychologists group claimed the fewest benefits, but the interval between the session and the testing was longest for them; increasing this interval tends to decrease claims of benefit.

In the second study, McGlothlin, *et al.,* gave 15 subjects 200 mcg of LSD. There were 14 comparison subjects. They were tested again one week later with Cattell's anxiety measures. There was no change in their comparison group but the treated subjects showed a drop in dogmatism and an increase in constructive responses. A comparison was made of claims, or expression of opinion, about the experience between subjects reported by Ditman, Hyman and Whittlesey (1962), by Janiger and by their own subjects. These are given in Table 10.

Mogar, Fadiman and Savage (1963) tested a large series of patients

TABLE 10

Results of Treatment with LSD
Savage, Hughes and Mogar (1964)

Group	Number	Better	No Change	Worse
Neurotics	62	53	8	1
Psychotics	15	6	7	2
Personality disorders	137	118	18	1
Alcoholics	24	17	6	1

treated with LSD as described by Sherwood, Stolaroff and Harman (1962). One month before the treatment, each subject was tested with the Minnesota Multiphasic Personality Inventory (MMPI), the Interpersonal Check List (ICL) and the Value-Belief Q-sort. They were retested three days later at the end of two months; and again at the end of six months.

After two months there was a decrease in all MMPI scores except on the manic scale. The most notable decrease occurred in depression, psychesthenia, schizophrenia, social introversion, anxiety, neurotic overcontrol, and evaluation of improvement. After six months, there was a trend for scores to drift back to pre treatment levels but they were still much lower than pre treatment scores. In clinical language, as a result of treatment with LSD, subjects were less depressed, had a greater sense of well-being, were less compulsive and anxious, had more adequate ego resources and were friendlier. Patients who were most severely ill showed the greatest changes afterwards.

3. "No good can come from a chemically induced delirium or psychosis." This criticism so contradicts man's experience with drugs and talk of drugs that it requires no answer.

4. "LSD has not been 'proved' effective or safe for any psychiatric condition." These critics assume that no therapy is "proved" unless a double-blind comparison experiment is conducted. The word "proved" is a strange one in clinical science. Usually clinical scientists define the level of confidence or proof by a probability. That is, they will accept, if they are statistically inclined, a five percent level of confidence. They will accept a finding as proof if there is only a five percent chance the claim is wrong. Others may demand much stronger evidence and some may be satisfied merely with an indication. In general no statement demanding proof has any scientific meaning unless the author indicates which level of proof he would accept. Using a puristic point of view, one could claim no psychiatric therapy has been "proven" to be effective for any psychiatric condition.

Criticism 4 (a) really is a demand for double-blind studies of LSD. The answer consists of two parts: Are double blind studies really superior to classical methods in proving drug efficiency? It is possible to double-blind LSD?

The majority of clinicians have not accepted the oft repeated claim

that double-blind techniques are superior to classical clinical methods. As an example, Baird (1964) stated "The insistence in recent years on 'blindness' or 'double-blindness' in evaluating the effect of therapy is an insult to the intelligence of the average clinician." In addition a large number of scientists who have worked with double-blind procedures have become increasingly disenchanted with them. It has been a clumsy, expensive method which has not convinced anyone of its value and which is readily dispensed with when decisive action is required. The toxicity of Thalidomide was not proven by double-blind studies nor have the many new drugs removed from the market been proven toxic by double-blind studies. It appears that when firm action is indicated, classical clinical methods are adequate, but when matters of efficiency are involved these methods suddenly become much too crude.

If Baird and other physicians were unsupported one could ignore clinical, within-patient studies, but when in fact he is supported by eminent statisticians such as L. Hogben, R. A. Fischer, Chassan (1960, 1961), Bellak and Chassan (1964), and by others we have reported (Hoffer and Osmond 1961, 1962, 1962a), eminent clinicians including S. Cohen, H. Lehmann and others, and by eminent psychologists, including H. Klüver, we must ask the proponents of double-blind methodology to prove at the usual five percent level of confidence that their methods are more apt to show which chemicals are effective for certain conditions and which are not effective. Until this is done, no clinician need feel guilty about using the old fashioned clinical methods including single case studies; for these were the methods which introduced into psychiatry ECT, tranquilizers, anti-depression drugs, open wards, eradication of pellagra psychosis, general pareses of the insane, and a host of other treatments. Better methods will and must be found and double-blind methods are indeed useful in certain mopping-up studies. They serve a useful function as large-scale, human toxicity trials and they are very convincing to inspectorial physicians concerned about global efficacy; but they have hung a millstone around our necks which is steadily becoming more burdensome. It is ironic that recently one million dollars was spent to demonstrate the accuracy of one man's observation. (Lehmann on chlorpromazine).

Some critics (see inverse square law) have suggested that a placebo could be used to double-blind LSD. This betrays an extraordinary lack of experience with LSD. No experienced therapist would be in any doubt within one hour about determining whether distilled water or 200 mcg of LSD had been given even if he were blind and could not see the pupillary blotation produced by LSD; every scientist who has worked with LSD agrees with this. Only a person completely unfamiliar with psychiatry and with LSD could mistake situational anxiety for the LSD reaction in a non-psychotic subject. It has been suggested further that a new compound should be developed which would produce the same (or similar) visual changes as LSD. This is not helpful, since no such compound is known and if it were, would not prove anything, for it is possible these visual changes are responsible for the therapeutic results. There is no

valid reason to suppose LSD is more effective than psilocybin or mescaline. It is the experience, not the compound which induces it, which is responsible.

However, if double-blind studies were possible, investigators would use them, not because they are better, but because they are more fashionable. Perhaps pre-treatment with penicillamine would provide such a design. Statistically identical groups could be pre-treated with penicillamine and with placebo; then all could be given LSD in the usual way. The penicillamine would not interfere with the perceptual component of the experience but would dampen its emotional component. It would be very difficult for therapists to decide which patients had received placebo or penicillamine. One could then conclude that the normal LSD experience was or was not superior to penicillamine-LSD. My data suggest that the improvement rates would be 10 percent after penicillamine-LSD and 50 percent after LSD. However, even such a controlled double-blind experiment would not persuade the critics for by then they could have produced newer, unverified suggestions.

Criticism 4 (b) means little. Any new explanation, if it is to be new, must be uncommon in medicine or in psychiatry. Community of ideas is usually not appealed to by scientists; it applies more to legal and ethical requirements in a court of law. However, I find Coles' and Katz' (1964) statement most surprising. Presumably they are unfamiliar with the enormous range of theoretical formulations, from conservative Freudianism to radical biochemical reasoning. I find it difficult to understand how modern psychiatry, which bases so much on random events, dreams, ideas, and *lapsi linguae* can find any formulation uncommon.

Criticism 4 (c) is very like 4 (b). It is an inevitable consequence of any new idea that it produce violent disbelief and concern in physicians. We should remember that many novel ideas of the past are commonplace today. Just a few examples will demonstrate how science has reversed itself at times. Mendelian theory was resisted from 1865 until about 1900 because Mendel's conceptions ran counter to conceptions of inheritance, not common to medicine in general. Mendel's peers condescendingly considered his work insignificantly provincial—it produced disbelief.

The application of mathematics to biology was seriously questioned for many years. In his biography of Galton, Pearson reported he sent a paper to the Royal Society in 1900 which used statistics. Before it was published the Council of the Royal Society passed a resolution that "in future papers mathematics should be kept apart from biological applications." Galton founded a new journal and in its first issue wrote "a new science cannot depend on a welcome from the followers of the older one. Harvey, Pasteur, Magendie, Lister, Funk, Fleming, all found their ideas severely tested by unreasoning hostile criticism because their ideas were uncommon. It seems that new ideas rarely are accepted with an open mind.

Criticism 4 (d) is another variant of 4 (b) and 4 (c). Any new explanation, however sound it may eventually prove to be, seems bizarre, almost schizophrenic, to the defenders of the faith. But 4 (d) goes further in its *ad hominem* diagnosis of scientists who use LSD for therapy as

suffering from paranoia (sharing a delusional belief). This is of course a redundant *non sequitur,* for the definition of delusion is an uncommon idea from which its possessor will not part when confronted with common ideas. This is what these authors have already said in 4 (b) and 4 (c).

Critics of LSD suggested many factors which could account for the therapeutic results claimed by LSD therapists. The usual ones include faith, bad samples, bias in observers, etc. These are possible factors, but are they merely possible or are they likely? Before they can be accepted seriously it must be shown that these variables improve a proportion of alcoholics. Where are the double-blinds which prove that faith, bias, etc. can produce equivalent results? I suggest that proponents of these variables should provide data for their favorite hypotheses before they expect others to work them into their clinical studies. The critics of LSD therapy would strengthen their position enormously if they would demonstrate a double-blind study of placebo, or faith.

The scientific literature (excluding editorials and review articles) is singularly affirmative. Every worker who studied LSD's use for treating alcoholism is in unusual agreement (see Table 2). The only recorded study where there is some disagreement is that of Ditman, Hayman and Whittlesey (1962) who examined the duration of claims for improvement made by subjects who had been given LSD. The authors stated "the subjects had originally been given 100 mcg of LSD 25 orally, in a permissive but *non-treatment* [emphasis refers to *Mauve,* not the authors] setting, in order to compare the LSD experience with that of delirium tremens." Again they stated, "Our subjects received no intended psychotherapy during the LSD experience." Questionnaires were sent to their subjects about one-half to one-and-one-half years after their last LSD experience and of those who responded, twenty-seven were alcoholics. Of this group of twenty-seven, eighteen subjects claimed they were better, were in more comfortable circumstances, earning more money and had decreased or stopped drinking.

Inasmuch as this group had not been given LSD as therapy, or in a therapeutic setting, and had received only 100 mcg of LSD, which we have found is relatively ineffectual for most alcoholics, this is indeed a surprising result.

However, a second questionnaire sent to the same group two years later was answered by only sixteen. Four of the other eleven had died, three from drinking. Of this group of sixteen, eleven still claimed periods of abstinence ranging from one to one-and-one-half years and twelve claimed lasting benefit. These authors state that this indicated fewer claims but a Chi Sq. analysis of their own reported data does not support this contention. Thus, in their first questionnaire, eighteen out of twenty-seven claimed improvement; in their second questionnaire, eleven out of sixteen. Chi Sq. is less than 0.5. These results are practically identical. However, none had maintained his sobriety. We interpret this to mean that although nearly two-thirds of the group maintained they were improved at the time of the second questionnaire, three and one-half years after receiving an ineffectual dose of LSD, none had been continuously

sober for that entire period. We mention this report in some detail because other people have made claims, based on this report (not made by Ditman, *et al.*), to the effect that LSD was not an effective *therapy* for alcoholism. The concluding statement merely said: "Three and one-half years after *exposure* to LSD there remained only claims of slight improvement and none of the alcoholic subjects had maintained their sobriety." Had they been given 200 mcg or more, with a therapeutic objective, in a therapeutic setting, by therapists interested in the therapeutic experience, and had they used the community resources, including A.A., perhaps at three-and-one-half years about fifty percent or more of their subjects would have been sober.

DISCUSSION

Dr. Eisner: Do you find anything other than malvaria? Do you find any psychological, psychiatric factors, or anything else to go along with this urine test?

Dr. Hoffer: Yes, well, there are several categories. If I had made a comparison of most malvarians against non-malvarians who have not as yet had to be admitted, it would be very difficult to see how they differ clinically. On the other hand those who have been admitted must be much sicker, and there you will find that the malvarians, in general, are not distinguishable from schizophrenics. The non-malvarians conform to the neurotic group.

Dr. Murphy: This finding of malvaria is quite a teaser from the biochemical point of view. In view of all the recent findings in schizophrenia, for instance, it would be of great interest to know, if you have any hint, what this malvarian spot is on the matrix. And, also, what happens to it when you give nicotinic acid, for instance. Or under any other circumstances, what does happen to that spot?

Dr. Hoffer: I wish I could tell you what the spot is. It has the color reactions of indoles and pyrolles and, on paper chromatograms, the running characteristics of pyrolles. We have not identified it yet, but we can measure it in urine and we know roughly where it is coming from. Its source apparently is tyrosine. I suspect it comes from an indole. We think it contains a pyrolle ring and that the same thing happens to it that happens to dopachrome when it forms melanin. It is very similar to the process of melanization in skin. I can't tell you what it is. I don't know; I just suspect it is a pyrolle.

Dr. Murphy: Then after you treat with nicotinic—

Dr. Hoffer: Well, it is not the nicotinic acid. Any treatment at all which will produce a change in the patient may remove it. The relationship is to the clinical condition, not to the treatment. If you can treat your patient successfully with psychotherapy, the mauve factor will disappear.

Dr. Blair: Just two things. First of all, our chairman has already pointed

out that when we talk about alcoholics, we are really talking about people who are taking excessive amounts of alcohol. A lot of them differ in types of illness and in types of personality. I confirm that people who have this malvarian spot really are either schizoid, extremely schizoid personalities, or incipient schizophrenics. The clinical course tells us that. The second thing is, I wonder if you can please tell us your rationale in the use of nicotinic acid in the treatment of schizophrenia and what dosage you use.

Dr. Hoffer: Well, in respect to the first question, very few of these people are really schizophrenic; only a couple were actually clinically schizophrenic. Perhaps some were schizoid, but with an alcoholic it is very difficult to decide whether he's schizoid or simply alcoholic. I do believe that the malvarian group represents that proportion of the population, about ten percent, which under stress can develop this kind of illness. If you assume that the schizophrenia has a twenty-five percent penetration, it would come out at the right figure. That is, about two percent of our population, during their lifetime, might become schizophrenic.

I do think that many alcoholics are schizophrenics and use alcohol as a treatment. As you know, many members of A.A. are solitary drinkers who finally are excluded from A.A. because they simply will not carry on the program.

LSD makes it possible for many alcoholics to follow the A.A. program successfully. The rationale of any treatment is very unimportant; it is usually after the fact. Once you have a treatment that works, you develop a rationale. Our original rationale is probably not correct. Our original idea was simply to do something which would cut down the production of adrenalin in the body. Whether it does this we don't yet know. The dosage of nicotinic acid is three grams a day. Some people think this dose large and I think it very moderate. I should tell you that we are not using it as a vitamin; these people do not have a specific vitamin deficiency. We're using it as a pharmacological agent. We have treated many hundreds of patients; we have done four or five double-blind controlled experiments, having started our first double-blind controlled experiment in 1953 and I have since then concluded that they are really very ineffective. We have had people continuously on it during that period of time, and we are not quoting ten-year—I hate to use the term "cure," but we'll use the word "cure" in the way that you use it with pneumonia, that is that you can get a recurrence of the syndrome—we have ten-year cures, running seventy-five percent, while the comparable rate for control groups is thirty-five percent. The treatment is not simply a matter of giving nicotinic acid. It is an entire treatment philosophy which uses that, plus other therapies.

Dr. Van Rhijn: It is reported by some people who have used nicotinic acid that certain alterations are seen, like edema, or thickening of the layer of the skin.

Dr. Hoffer: This is very surprising; I've never seen it. When you look at my skin, you'll note that it is very good. I've taken nicotinic acid for

years. I haven't seen that complication, although I don't deny that it may occur. It must be a very rare condition. I should tell you that nicotinic acid is remarkably safe; we have had patients on twenty-five grams a day for three months, merely to test its toxicity, and there haven't been signs of tissue damage. There has been one case of liver damage reported and I think this was an error. Since there was only one reported case of liver damage, you might even say that people on nicotinic acid are less apt to get liver disease.

Dr. Ward: What is the relationship with the high H.O.D. score and malvaria? How closely do they relate?

Dr. Hoffer: If you exclude out-patients, where the relationship doesn't hold, and deal only with in-patients, the relationship is very high. You can predict that the high score on the H.O.D. test will more often have the urine factor than the low score.

Dr. Ward: Do you have any probability figures on it?

Dr. Hoffer: Well, that depends on the H.O.D. score. If your H.O.D. score runs 150 or better, you get about a ninety-five percent probability. If your H.O.D. scores are up fifty, they run about sixty percent, and when your H.O.D. scores are around about thirty, which is the upper level of normality, then there's no relationship.

Dr. Fremont-Smith: I might say a word. It worries me, and perhaps unjustifiably, to have a new term introduced, which as yet has a limited specificity chemically, and which also carries with it an implication of a diagnosis, a diagnosis which also has an implication of a prognosis. Now we have had an example of this with the electroencephalogram and epilepsy; and it has taken us a long time to get over the idea that an encephalogram of a particular kind means epilepsy as a clinical entity; it doesn't. And there have been all kinds of instances in which the encephalogram has shown important changes which could be characteristic of the so-called epilepsy in which no convulsion had ever been seen in the patient. Therefore, my own feelings is, and I know this is a nice term and you have invented it and therefore have an investment in it, and it has already been adopted in this room, but it worries me because I think it may very well be that we'll have to undo it when we learn more about the chemical nature of the substance and its real significance in connection with the patient. Well, this is just a mild protest against the adoption of a term which is based on one thing, and also carries with it something else in implication.

Dr. Hoffer: Well, we did worry about that, Dr. Fremont-Smith, and we felt that there was a greater danger, and this was that people would say that we had a test for schizophrenia; and this is what we were afraid of even more.

Dr. Fremont-Smith: But you think you've guarded against it? I'm afraid you've done the opposite! This is what I'm worried about; the implication is that this is equivalent to schizophrenia.

Dr. Hoffer: Well, we haven't—

Dr. Fremont-Smith: I know you haven't, but if you simply described this thing as being present in the urine in so many cases of such kinds,

the implications wouldn't follow. However, this is my own prejudice, and I'm frank to say it is a prejudice. Any further comments?

Dr. Pahnke: You said, Dr. Hoffer, that in non-malvarians you were shooting for, and got, about fifty percent psychedelic experiences in your alcoholics. Dr. Johnsen said this morning that he got one hundred percent psychedelic experiences, when he was shooting for it. And I wondered, Dr. MacLean, what is your percentage?

Dr. Hoffer: Well, you remember I asked Dr. Johnsen whether he used only LSD, and he didn't. We used only LSD, whereas he supplemented it with other compounds at the height of the experience, so that our data are not directly comparable. Now, I think that is a good question for Dr. MacLean.

Dr. MacLean: I can certainly say that we do not get one hundred percent psychedelic experiences, if by the term "psychedelic" you mean transcendental experiences. We are probably closer to thirty or forty percent. Certainly, I would add to this the fact that we get some psychedelic experiences with our various neurotics that we treat.

Dr. Osmond: I think Dr. Fremont-Smith's point is well taken, but it is a difficult one. For instance, when you have a test like the Wasserman, which kept coming in, say about 1905, it was a pretty crude bit of work. There was for years a long discussion about this, and I think it is correct to say that Adolph Meyer, to his dying day, remained very indignant about general paresis, which he referred to as a dirty experiment of nature; so I think you get it coming and going. This is an exercise, in other words, to make an illness based on a chemical factor, which, after all, is no less precise than the Wassermann was in its time. I don't think that we would wish to defend this in that way, because we hoped to abandon it eventually. I think that we said this in the original paper.

Dr. Fremont-Smith: The best way to look forward to having something abandoned is not to say it. The best way not to have it abandoned is to put it on the record and say, "Please pay attention to this word, which we want everybody to throw out," and soon everybody is using it. So I'm afraid you have caught yourself in your own trap.

Dr. Osmond: I am not sure you are right!

Dr. Fremont-Smith: I hope I'm not wrong.

Dr. Hoffer: I think you are mistaken; I think this will be a great challenge. If it were not for the fact that it is extremely difficult, I would have replaced malvaria with another term; but we couldn't find the term.

Dr. Fremont-Smith: Well, at the next Conference, we will report on this. Who else would like to make a comment?

Mr. Calder: My name is Calder, and I am an observer here; I'm now with the National Council for Alcoholism. For ten years I've been Director of the Alcoholism Program in Saskatchewan; we are a branch of the Development of Social Welfare. We were simply interested in finding a treatment that worked; and I was once in the midst of this LSD in bio-clinical development and had a very extraordinary experience. Ever since then I have been at a bit of a loss to understand why LSD isn't used much more because of its extraordinary efficacy.

The first time that I began to see clearly what was going on was when I heard the remark that you made today, Dr. Van Rhijn, that "we simply found something that worked and began to use it as a treatment." Now I realize that there are many problems with drugs in an experimental stage. But I remember Dr. Hoffer telling me soon after (one of the first things I did when I took on this responsibility was to go around and talk to people who were treating alcoholism any way at all in our provinces), "We want your worst cases; we are not interested in mild cases that could recover through A.A. or through any other agency that you now have available." At that time, a quite adventurous time began for us, particularly, because our staff, through the kindness of these investigators, was allowed to work with them; many of us took LSD. I had LSD a great number of times, so we had subjective insight into what the patients were going through. I think the best facilities that I saw operating there were not Dr. Hoffer's, strangely enough, where he was using short-term treatment in a psychiatric ward of about a week to ten days. We were sending the worst cases into a ward of Dr. Osmond's hospital, a very small ward of ten beds, where patients were kept six to eight weeks and were given psychotherapy. There were A.A. meetings held, psychiatrists and psychologists were there to help them with their problems, and this was all climaxed by one very intense LSD experience. Now I've been away from Saskatchewan for a year and a half or more, and for several months before that I had no direct connection with what was going on. We had our own facilities where we screened the patients and sent them on for treatment and followed them up afterwards and gave them support. There were many techniques devised; many of the things I have heard about here were put into operation there. One of the little quirks, for instance, was that if a patient, after treatment, came back into his community and a few months later said, "I feel I need more," he could phone Dr. Hoffer in Saskatoon, or he would phone Dr. Jensen in Weyburn, and come back in for a day or two and have another LSD session and go back to his community. Some of them did this. At that time, at Dr. Osmond's request, we did a survey of patients that had been treated there (the worst cases from one ward). The recovery rate of those who never had a drink again ran around sixty percent; and the improved category (we had set up criteria for improvement) brought up the recovery rate to around seventy-five percent. These were people who had become dissocialized; they had begun to show paranoid symptoms, we thought; and some of them had been extremely psychopathic in their behavior. Many of them became pretty good citizens, I think. I couldn't resist making these remarks. I don't know how interesting they are, but this afternoon I have become quite stimulated by hearing these discussions that are so pertinent to my work.

LSD 25 and Mescaline as Therapeutic Adjuvants*

J. Ross MacLean, M.D., ** D. C. MacDonald, M.D., **
F. Ogden** and E. Wilby**

INTRODUCTION

In March 1961 a report was published concerning the use of d-lysergic acid diethylamide in the treatment of alcoholism and other psychiatric problems at Hollywood Hospital (1). Since that date, the use of psychedelic adjuvants to therapy has continued; modified techniques have been introduced; new challenges have arisen, and a fund of experience has accrued.

During this period many papers of scientific merit have appeared, but their implications and potential have been largely accorded the status of curiosa. The media of mass communication, both understandably and regrettably, tend to over-represent the favorable and unfavorable extremes of psychedelic use and abuse. The period has also been a time for reflection and evaluation. Deliberate misstatements of fact may be conclusively refuted, but in the areas of supposition, speculation, experiment and conclusion, little heed has been paid to critical basic issues. It would appear that, in the heat of contention, a certain lack of perspective has evolved which is not to the credit of those seeking the sanction of science.

The descriptions, observations and viewpoints expressed in this paper are based on extensive practical experience. More questions will be raised than answers given, since it is the authors' belief that an open forum of debate is sorely needed. The future of psychedelics in North America appears to stand in jeopardy, and workers in the field must be prepared to evaluate their position realistically and with conviction. There must be a willingness by both proponents and opponents to concede theoretical and procedural limits; tunnel vision among the more vociferous critics must be broadened, and the unrestrained evangelism of some enthusiasts must be tempered. In the absence of a new measure of open-mindness, tolerance and reason, controversy will persist with the distinct Probability that society as a whole will be the worse.

* A seven year study conducted at Hollywood Hospital, New Westminster, B. C., 1958-1964

** Medical Director; Psychiatric Consultant; Research Assistant; Research Assistant: respectively, Hollywood Hospital, New Westminster, B. C.

Psychedelic therapy at Hollywood Hospital constitutes but a minor proportion of total services rendered (less than 1.5 percent of total patient days are devoted to this approach) but the absolute number of treatments given, and the range of experience gained, provide a base for expression with a modicum of authority. This report on 370 cases has been drawn from a segment of almost 500 patients and over 600 treatments recorded since early 1957.

For the purpose of this conference, the well documented history of naturally occurring psychedelics, and the more recent synthesis of highly refined agents, require no review. To those familiar with our 1961 publication, a certain redundancy in this text may be apparent, but for many these references will assist in an over-view of our past and present approach.

For the initial stimulus in psychedelic investigation we are indebted to the pioneering work of Drs. Osmond, Hoffer and others in the Province of Saskatchewan, and to the insights of A. M. Hubbard.

Rationale of Therapy

Despite the contention by some that "there is no reliable rational for its (LSD's) use in any particular type of psychiatric illness..." (2) our view is quite contrary.

The biochemistry of mental illness and psychedelic reaction is not fully understood; therefore, no base for incontestable rationale exists in this area. However, those who appear unduly impressed with this "scientific" defect must be gently reminded that similar deficiencies have long persisted in the history of other widely accepted and applied therapeutic agents. The need for accelerated research in this area is apparent, but to retard the cautious sketching of outlines until the minutest details are catalogued is inconsistent with past progress. (3)

Objection to any rationale based on claims of "religio-mystical" impact is most prominently voiced. To the extent that psychedelics may be advocated solely or primarily because of this attribute, the criticism may be shared by a wide range of workers, including many with active experience in the field. This is not to deny that the "transcendental" aspect may occur, nor that certain benefits may derive from phenomena as yet beyond adequate description or explanation, but these are not the foci of rationale employed by those of us who view psychedelics as therapeutic adjuvants.

If a single justification for the use of psychedelic therapy is to be proffered, the unique abreactive experience must be given weight in our rationale. Certainly in our approach and observation it is impossible to concur with those who suggest an unfavorable comparison between LSD and intravenous sodium amytal as a means of eliciting repressed material. (4)

Abreaction as noted in, and reported by, our patients is not that of mere recall and verbalization; it is a total reliving of past events with a duality of intense personal involvement and detachment. This factor of detachment or "depersonalization" may in part account for patients

frequent ability to derive insights and integrate their experience with minimal external guidance. We are not prepared to indulge in explanations of some apparently beneficial results as involving "cosmic-consciousness" or other ethereal phenomena. However, we are impressed with repeated subjective reports of having attained new self concepts and altered frames of reference which appear substantiated by objective examination of subsequent behavior.

Selection of Patients

Applicants to undergo an experience induced by psychedelic agents are carefully screened physically and psychiatrically. We are mindful of the many cautions and contraindications in the literature, particularly with respect to cardiac conditions, psychotic states and tendencies. A final decision in each case does not rest upon a total absence of the commonly reported barriers to therapy, but, as is common in medical practice, to a weighing of all the unique factors in the individual presentation. There always must be consideration of calculated risk requiring a balance between the probable benefits to be derived, the near certainty of prognosis in the absence of treatment, and alternate courses.

Our practice in selection as a whole must be viewed as conservative. The status of each applicant is that of "patient;" thus certain essential research freedoms are necessarily restricted. We have undertaken therapy without untoward incident in cases that tend to refute some of the traditional contraindications; however these are isolated instances which in no way diminish the principle of caution, nor the need to reach decisions in accord with accepted medical norms.

The basic aids in screening include:

1. Medical history and physical examination, blood morphology and urinalysis
2. Psychiatric history and evaluation, and psychometric tests
3. An extensive autobiographical report following a standard format

Preparation for Therapy

Those applicants considered amenable to psychedelic therapy are counseled concerning the nature and objective of their forthcoming "experience." Much has been said of the possible role of suggestion and expectation, with the clear implication that patients are systematically pre-conditioned, thereby accounting for much of what is experienced, and for much of what is reported as "success."

To the extent that a clear explanation of the probable sensations, reactions and significance of that which will be encountered, constitutes suggestion," we do indulge in this practice. To the extent that patients may have an element of hope that benefit will be derived and that little is done to curb this expectation, we may again be subject to some censure. However, it should be noted that our program is one of patient therapy, notone of controlled experiment with inert subjects. There are many

opportunities for research in a private mental hospital, but there are certain practical considerations that preclude the manipulation of those in our care for the mere purpose of satisfying all the stringent demands of scientific methodology.

To those who would evaluate psychedelic agents *per se,* sterile controls of infinite variety are required, but if the *therapy* is under study, all facets, from preparation to follow-up, must be viewed as essential to the whole. The critical issue in our reports is whether suggestion and expectation play a dominant role. It is our considered opinion that they do not, but we are not prepared to document this position by exposing patients to the chemically induced experience without the safeguards of understanding and reassurance.

The autobiographical material found useful in screening is undoubtedly a key factor in preparation. The act of focusing attention on one's origins, relationships, events, attitudes and desires, perhaps for the first time, undoubtedly orientates the patient to self-evaluation and otherwise sets the stage for much of what will be experienced. This facet of preparation is also viewed as an integral part of the total therapy.

At one time, carbogen inhalation was used to prepare the patient for some of the sensations to be anticipated. This practice has been curtailed since the necessary technical equipment, plus the rapid onset of anasthesia, led to anxiety and fear of sufficient proportion to offset the presumed advantages of familiarization and "trust." The only mechanical device now used is the stroboscope which permits some appreciation of color pattern, intensity, and related feelings that will likely occur as the psychedelic reaction commences.

Psychedelic Agents and Dose

The agent of choice (LSD, Mescaline, or both) is selected on the basis of clinical judgment. The apparent impact of LSD, its ability to break through ego defenses, is more marked than that of mescaline; while the latter tends to have a milder onset and more prolonged action. Similarly, the initial dose selected is primarily one of opinion shaped by personality factors. The rigid, over-controlled, intellectually sophisticated and defensive patient requires one approach; quite another has been found more suitable with the flexible, passive, emotionally open and receptive individual.

Criticism has been leveled against the lack of precision or predictability in selecting agents and quantities to attain a given reaction. There is undoubtedly a certain comfort in the ability to prescribe according to "kilogram-body weight," or other implied standard of mechanical accuracy, but to our knowledge no such guide has been successfully developed. As in many areas of medicine, the exercise of discretion founded on experience remains a guide to sound practice.

The approach currently used employs LSD in quantities ranging from 10 mcg to 1,000 mcg, with the average dose being 400 mcg. Mescaline is used in the range of 250 mg to 1,400 mg, with an average of 700 mg.

The Treatment Setting

The psychedelic experience is undertaken in a large lounge, with lavatory facilities and enclosed porch. The predominant wall color is buff, with dark green draperies and white, acoustic-tiled ceiling. All furniture is heavily upholstered, and with the exception of the massive high fidelity speaker housing, the general appearance is that of a comfortable, quiet living room. There are no pictures or other decoration, and this lack of visual stimuli represents a departure from our earlier setting.

The original premise was that certain pictures, books and artifacts, carefully chosen for their "universal symbolism," would assist the patient to focus upon and explore areas of philosophic significance, particularly during the transcendental phase. To some extent this objective was achieved, but the paraphernalia also proved distracting and confusing at times. There was some reason to believe that the therapeutic benefits were not necessarily dependent upon the level of experience presumably facilitated by these visual aids; therefore, present practice favors, on an experimental basis, a "neutral" environment.

The Treatment Method

That central core of therapy—the "experience" triggered by a psychedelic agent—is conducted in the following manner.

The patient is comfortably and informally clothed, often in sleeping attire and bathrobe, and when emotionally receptive, ingests the prescribed agent orally. We do not follow the practice of parenteral administration, in part because of the rapid and overwhelming impact that occurs with heavy doses, and in part to avoid the apprehension often associated with such procedures.

To the extent that verbal communication is used, the therapists are essentially non-directive; suggestions may be made that certain life experiences, attitudes or emotions be examined at appropriate times, but discussion, interpretation, and much that normally is associated with conventional psychotherapy is avoided. Music, or more correctly, sound, is used extensively to influence emotion and content during the experience. The exact mechanism of this control is not fully understood and is one of the many facets of therapy under study.

Where we formerly advised abstention from food immediately prior to the experience, it has been found that a normal breakfast, contrary to expectations, appears to have a salutary effect with respect to nausea.

At the onset of the initial symptoms the patient is encouraged to recline on a sofa and "go with the experience." This is a critical point of trust since there is an innate tendency to resist relinquishing the habitual state. The physical presence of skilled and empathetic therapists, appropriate music, and eye-shields to block visual distraction are employed to assist in the transition with minimal anxiety.

Throughout the experience, usually persisting for six to twelve hours, but occasionally much longer, the patient is under constant supervision

by one or more staff members who have had a psychedelic experience. A physician or psychiatrist is frequently present and always at hand. In addition, closed circuit television and audio supervision is maintained by the physician in charge through use of a private monitor.

The experience is allowed to proceed without chemical interruption since, in our experience, no uncontrollable or deleterious situation has arisen that would warrant such action. On the contrary, reactions which may be viewed with alarm by some workers may, in fact, indicate the crisis necessary for a breakthrough of defenses. It is also our considered opinion that many of the insights and integrative features of the experience occur in the zone of naturally diminishing reaction. During this period the patient returns to the familiar environment of private accommodation, alone, or in company with a therapist, as circumstances may require.

The patient must, under all circumstances, remain in the hospital overnight following treatment, and discharges the next day are discouraged. In such an event, driving an automobile is prohibited, and the patient must be accompanied by a responsible party.

The Nature and Range of Reaction

Numerous descriptions of a typical experience in compartmental units, levels or "bardos" are available. There is a certain practical utility in such abstractions, but attempts to depict an average reaction, either as to content, intensity or sequence, must inevitably reduce infinite variety to generalizations in which much is lost. To the consternation of many, there appear to be semantical limits that render most accounts pallid and inadequate.

In the nearly 500 experiences upon which this paper is based, the continuum of reaction from "heaven to hell" has been observed. Some patients have remained almost totally mute and immobile throughout; some have been verbally and physically hypomanic; for a few, uninterrupted trauma has persisted, and others have encountered only "pleasure" —apparently in its most exquisite form. In very rare instances no appreciable response could be induced.

For the majority of patients the experience includes: feelings of bodily change and physical plasticity; heightened perception of color, sound and texture; age regression and abreaction; depersonalization; transference; altered frames of reference; fresh insights into motivation; changes in goal and value orientation. The net effect of the experience is to facilitate new self concepts and appreciation of reality in a process of "re-education," embracing conventional therapeutic mechanisms, and some which are, as yet, only tenuously explained.

To varying degrees, patients approach or attain the ultimate "mind manifesting" levels that give rise to descriptions viewed as rationally offensive by many critics. Defective as our means of communication may be, and faulty as most speculative explanations undoubtedly are, no amount of invective can alter the fact that phenomena of significance have been experienced.

With respect to negative features during the reaction, transient and occasionally persistent nausea may appear as symbolic concomitants to the "psychological enema." Paranoid manifestations are not infrequent among those unable or unwilling to relinquish habitual defenses. Physical aggression and destructive impulses are sometimes seen but they are easily controlled and present little hazard to either staff or patient.

Follow-up

The immediate post-treatment follow-up is, of course, an integral part of the total therapy. The amount of time devoted to "counseling"—interpretation and integration of the experience, and support—varies widely. In some cases the patient requires relatively little assistance; in others intensive psychotherapy may be undertaken. For many, the experience has been a kaleidoscope of visual and emotional stimulation that results in a measure of confusion. These patients may require several days' hospitalization and frequent counseling sessions. In some instances there is a surprising degree of intuitive insight among those who are not intellectually or psychologically sophisticated. Post-treatment depression is not common, nor is it rare. This reaction presents little difficulty and usually subsides with the growth of self-acceptance under the guidance of the treatment team.

Following discharge, patients are encouraged to return for further counseling as frequently as they desire. In practice, this results in weekly appointments during the first month and a gradual weaning over the ensuing year. Such protracted support is not always possible for geographic reasons, but correspondence contact is maintained wherever such need is indicated.

Subjective reports of progress are routinely requested, and objective confirmation is frequently possible without violating the ethical patient relationship.

RESULTS

Assessing the impact of any psychosocial therapy is one of the most crucial yet contentious and potentially defective tasks to be undertaken.

There is some reluctance to face the self-evident fact that "response following therapy" is not necessarily synonymous with "response due to therapy." To the extent that certain variables may be controlled, objective criteria satisfied, and appropriate statistical techniques applied, there may be a lessening of the gap between implicit and explicit claims. It would appear that much of the criticism leveled against psychedelic reports—excluding, of course, that referring to patently pseudo-scientific or grossly unsound work—results from demands for laboratory sterility and procedures which are not applicable in practice. This statement is neither a defense nor an apology for failure to overwhelm criticism with unassailable evidence; it is a plea for tolerance in evaluating reports with a realistic appreciation of the operational circumstances.

In presenting observations from our experience, elaborate statistical tables, use of control groups and other revered symbols of research are conspicuously absent. However, it is suggested that clinical impressions and conservative inferences are not without merit or precedent in approaching new frontiers.

In our first paper, one hundred consecutive cases treated with psychedelic adjuvants were reported. Following is a brief review of that record.

Progress categories were assigned on the basis of staff knowledge, subjective patient reports, and objective confirmation by collateral contacts.

"Much improved" means a marked improvement in interpersonal relations, work habits, self-acceptance, family and social responsibility. For alcoholics it includes complete abstinence, and for non-alcoholics it means complete remission of the presenting problem.

"Improved" means easily recognized and significant improvement in the rated areas, although not requiring total abstinence or total remission of the presenting problem.

"Unchanged" means no fundamental positive change in the rated areas.

TABLE 1

Progress classification of "first" 100 patients by diagnostic group. Mean follow-up period, nine months

	Alcoholics (*N*=61)	*Non-Alcoholics* (*N*=39)
Much improved	49%	56%
Improved	26%	33%
Unchanged	25%	11%

It is now possible to re-examine the same 100 cases with a mean follow-up period extended from the original nine months to a present fifty-five months.

Fourteen patients are deceased, and progress classification has been assigned on the record at the time of death. (Since there may be special interest in patient mortality, a brief review of these cases appears in Appendix A.) In eleven cases where recent confirmed information could not be established, no classification has been made. In order that a valid comparison can be made, Table 2 indicates findings with respect to those for whom valid and reliable judgments, then and now, appear possible.

The implications of these data are quite clear. With an average of nine months' follow-up, approximately one-half of alcoholic patients were abstinent and markedly improved in emotional and social functioning. One-half of the same group, with an average of fifty-five months' follow-up appear to have maintained their record of highly favorable progress.

Both from the record, and from patients' comments, it is apparent

TABLE 2

Progress classification of 89 patients rated, with a mean follow-up period of 9 months (First Study); compared to the same 89 patients rated, with a mean follow-up period of 55 months (Present Study)

	Alcoholic Group		*Non-Alcoholic Group*	
	First Study	Present Study	First Study	Present Study
Much improved	52%	25%	63%	55%
Improved	26%	23%	26%	34%
No change	22%	52%	11%	11%

that progress tends to diminish with time. It would be specious to compare this relapse rate to those reported for other therapeutic regimes, but, considering the severity of problems and the frequent failure to derive benefit from other rehabilitative resources, this regression is neither surprising nor distressing. It provides a stimulus for further refinement of technique, with cautious confidence that psychedelic therapy has a sound potential in the treatment of recalcitrant alcoholics.

With respect to the non-alcoholic group, the relapse rate is appreciably less, but the group as a whole is highly heterogeneous. In general, the therapy has not proven beneficial in cases of narcotic addiction, or of psychopathic ("Sociopathic") disturbances. Treatment of psychotics and pre-psychotics has been understandably limited and generalizations cannot be made. Several significant though isolated successes may be reported, but their place is in case studies rather than group surveys. (Note, for example, case 27, cited in APPENDIX, which illustrates a depressive psychosis of the involutional type.)

Homosexual problems represent an interesting illustration of difficulty in classification. In this study, the criteria for "Much improved" include the "complete remission of the presenting problem." Few homosexuals in our group have attained a satisfactory heterosexual adjustment, yet many have derived marked benefit in terms of insight, acceptance of role, reduction of guilt and associated psychosexual liabilities.

As a group, those diagnosed as "acute anxiety" and "reactive depression" fare well, although these also have a relatively favorable prognosis regardless of therapeutic technique.

In presenting the follow-up evaluation of 371 patients treated, a significant implication as to reliability may be drawn from the intensive investigation of the first 100 cases. Staff opinion as to progress before the obtaining of confirmation suggests that there was a tendency, at worst, to inflate the record of alcoholics by two percent. In the non-alcoholic group, staff judgment tended to deviate from later facts by seven percent in a conservative direction. Thus, for the total sample, the following assessments for alcoholics may be assumed to be substantially correct; for the non-alcoholic group, our assessments may result in a slight understatement of fact.

Of the 371 patients treated, 18 alcoholics and 15 non-alcoholics could

TABLE 3

Progress classification of 338 patients on whom recent confirmed status can be determined: mean follow-up period, 38 months

	Alcoholics (*N*=217)	*Non-Alcoholics* (*N*=121)
Much improved	31%	46%
Improved	22%	37%
No change	47%	17%

not be rated on the basis of recent confirmed information. Therefore the progress record that follows applies to a total of 217 alcoholics and 121 non-alcoholics.

Numerous sub-analyses of the available data have been made in an attempt to find statistically significant correlates of success or failure. Age, sex, marital status, socio-economic status, type and duration of problem, and a host of similar factors appear to have little relevance to therapeutic outcome. Neither the psychedelic agent used, nor dosage has been found to correlate with progress.

Seventy-nine percent of patients were treated once only; 16 percent were treated twice, and five percent more than twice. No significant difference in response was noted as between single and multiple exposure to treatment. However, empirical evidence suggests the probability that a substantial number of potential relapses may be averted through the timely intervention of a supplementary experience.

Patient response to a questionnaire requesting subjective ratings in physical, emotional and social adjustment was good, quantitatively and qualitatively. Sixty percent of questionnaires were returned, and in only nine cases was the information discarded as clearly invalid or unreliable. Supplementary narrative was usually volunteered, ranging from pithy comment to an eight-page typewritten manuscript.

As might be anticipated, subjective evaluations tended to be "optimistic" and a number of corrections were necessary when information from all sources was correlated.

Questions with respect to physical adjustment involved 12 complaints commonly reported and often found to be of psychosomatic origin.

TABLE 4

Rank order of the five symptoms most often reported "improved" (lessened in frequency or severity), following therapy

Alcoholic Group	*Non-Alcoholic Group*
1. Fatigue	1. Fatigue
2. Headaches	2. Skin Rash
3. Excess Perspiration	3. Constipation
4. Rapid Heart	4. Stomach Pains
5. Skin Rash	5. Headaches

Questions with respect to emotional adjustment involved 16 symptoms indicative of the patients' sense of equilibrium and well-being.

TABLE 5

Rank order of the eight symptoms most often reported "improved" following therapy

Alcoholic Group		*Non-Alcoholic Group*	
1. Depression	(i.e. less)	1. Happiness	(i.e. more)
2. Happiness	(i.e. more)	2. Self-confidence	(i.e. more)
3. Tension	(i.e. less)	3. Anxiety	(i.e. less)
4. Irritability	(i.e. less)	4. Depression	(i.e. less)
5. Worry	(i.e. less)	5. Tension	(i.e. less)
6. Fears	(i.e. less)	6. Worry	(i.e. less)
7. Self-confidence	(i.e. more)	7. Loneliness	(i.e. less)
8. Anxiety	(i.e. less)	8. Optimism	(i.e. more)

Questions with respect to social adjustment referred to six areas: vocational, financial, recreational, community, legal and marital.

TABLE 6

Rank order of social adjustment areas reported as "improved" following therapy

Alcoholic Group	*Non-Alcoholic Group*
1. Recreational	1. Vocational
2. Vocational	2. Marital
3. Marital	3. Recreational
4. Financial	4. Financial
5. Community	5. Community
6. Legal	6. Legal

The implications of these data vary somewhat with one's orientation. However, their immediate practical application is to identify areas of priority in investigation, preparation, conduct and interpretation prior to, during, and following the psychedelic experience. It is interesting to note the rank order of most frequently mentioned areas of beneficial social change reported by the two diagnostic groups.

For the alcoholics, benefit was first recognized in terms of improved "recreational" adjustment. (The question was phrased: "Considering such factors as variety of interests, participation in hobbies, sports, creative activities, and other forms of pleasure and relaxation, do you feel your life has (a) improved; (b) remained the same (c) deteriorated?" Since a narrowing of recreational activities, often to the point of extinction, is a common characteristic of practicing alcoholics, and the regeneration of "healthy" outlets is one sub-goal of most therapies, it would appear that the psychedelic experience plays a prominent role in the re-adoption of desirable diversions. Undoubtedly the role of abstinence or markedly reduced alcohol intake is a pivot point in this change, but it is probably

equally influential in all other areas. The significance of recreation's first rank is that little prominence appears to have been given to planning and counseling in this reportedly important facet of recovery.

There are, of course, numerous alternative interpretations of the data, but our investigations are directed toward the revelation of "leads," not "absolutes."

In terms of structuring interview, treatment and follow-up counseling, we are impressed by the discrepancy (in both alcoholic and non-alcoholic groups) between the rank order of "vocational" and "financial" improvement. Both groups highly rate "vocational" improvement (considering such factors as job changes, responsibility, sense of accomplishment and other employment satisfactions), yet give relatively subservient position to the "financial" area (considering such factors as savings, possessions, credit record, investments and similar material gain).

A "reasonable" expectation might have been that the rank order would have been parallel, or interchangeable, but we now have some evidence to suggest that patients are more sensitive to, or desirous of, non-material gain. Such evidence does not derive from the rank order *per se,* but supplementary comment, and interview content, tend to describe goal reorientation in terms of "satisfactions" rather than "possessions."

A systematic analysis of the supplementary narrative material has proven a monumental—indeed nearly impossible—task to perform in a brief paper. Comment varies from the intensely critical, both well founded and groundless, to enthusiastic endorsement that ranges from factual to fanciful. The net conclusion from these comments, from the study as a whole, and from a cautious review of clinical experience, is that psychedelic therapy, similar to that so far undertaken at Hollywood Hospital, has both intrinsic merit and potential, in the treatment of many psychiatric and psychosocial disorders.

General Observations

In an international conference of this stature it would appear appropriate to raise questions, directly or by inference, which may lead to an exchange of views and, it is hoped, to the formulation of authoritative opinions or recommendations.

l. It is apparent that there exists a wide range of theoretical bases, physical settings and techniques in psychedelic use. Understandably we favor the methods developed and employed at Hollywood Hospital, but our position is "flexible," within the limits imposed by ethics and patient responsibility. We are not only open to constructive criticism and suggestion, but eager to profit from the experience of others.

In this regard, a further note concerning our rationale in therapy may prove of interest. Quite apart from the dynamics of cause, condition and "cure," our original interest in psychedelics was motivated by a desire to accelerate existing treatment processes. In our area, the need for treatment exceeded the personnel and facilities available; the situation appeared destined to worsen, and has in fact done so. Once our pilot studies

suggested the psychedelic experience could be undertaken with relative safety, and with a substantial likelihood of obtaining beneficial results, the present program was formally instituted.

The stress placed upon "abreaction and transference" as a justification for this therapy is, in part, an answer to severe criticism at the local level, that seemed focused upon discrediting, if not prohibiting, the use of psychedelics. Prominence was given to abreaction and transference, first, because it was warranted in fact, and second, because these elements constitute a widely recognized and accepted basis for most "conventional" therapies. Adopting this "non-controversial" rationale tends to obscure, or relegate to secondary position, a number of apparently beneficial phenomena that may enter the total rationale. We are certainly not unaware of these factors, including the measure of empathy, non-verbal communication, sense of "oneness," or "unity," that many patients report and value; the religio-philosophic insights that are sometimes attained, and that are described so loosely and pejoratively in terms of "mysticism." It is difficult to employ these facets of the experience within the framework of generally accepted rationale, but they are, nonetheless, phenomena which contribute to our continued use of psychedelics.

2. Although the patients reported upon in this paper all had clearly identifiable personality or behavioral problems, ranging from the mildly disturbed to the acutely ill, a growing number of normals are seeking the benefits often derived from a psychedelic experience. For this group, and to some extent for our patients, the term "therapy" is perhaps not entirely appropriate.

We have long held that the experience is one of accelerated unlearning and re-learning: it is essentially an educational process. While there are risks of misinterpretation in drawing analogies, much of the success or failure in the use of psychedelics is akin to success or failure in teaching. Some teachers are more competent than others; some teaching methods are superior to others; and pupils are variably receptive.

It is our constant goal to maintain a high level of "teaching" ability; to explore new teaching procedures; and to create maximum receptivity among those entrusted to us.

For example, brief reference has been made to the use of music, or "sound," in the initiation and control of emotion. This is a subject deserving of much more study than it has received to date. Not only does music have certain abreactive properties, but our patients appear to use it as "sound posts" in their journey, just as the traveler uses sign posts. Systematic investigation of music in therapy is being contemplated, as is the use of color. We are not proposing "chromotherapy," or attributing mysterious radiative powers to the visible spectrum, but it does seem possible that the judicious use of color may be another tool in shaping receptivity.

3. Among the criticisms raised with regard to psychedelic therapy is the claim that no objective evidence of benefit attributable to the experience has been adduced.

Since there is a wealth of irrefutable objective evidence that benefit does accrue, the sole argument must rest on the contention that it is not *"attributable to the experience."* While it is quite correct to say that "response following treatment" is not synonymous to "response due to treatment," to maintain rigidly that there is *no* relationship between the treatment and the response is to question almost all approaches to psychosocial manipulation. Such a position would appear to be born of ignorance and nurtured by desperation.

Another remarkable suggestion is that benefit can be explained largely, if not solely, in terms of "placebo reactors"—the strong implication being that these cases might have been aided equally by black magic, or by the laying on of hands!

Amusement or indignation, when confronted with transparently fallacious arguments of this nature, may tend to obscure a critical point: where does the onus of proof rest? Must pioneers prove their positions beyond all doubt, or is it sufficient merely to defend them? In our view there *is* a responsibility for psychedelic advocates to be at once adventurous in spirit, yet cautious, and scientifically methodical, in advancing hypotheses and reaching conclusions. However, an equal responsibility devolves upon the critical community to evaluate reports fairly and remain receptive, in the face of a challenged *status quo.*

As both stated and implied in this paper, society may be the worse if advocates and critics draw battle lines. The nomenclature and jargon regarding the use of alcoholic beverages are studded with pejorative terms. The "wets" and the "drys" are militant in the extreme; they are forces engaged in mortal combat; but, until very recently, those afflicted with alcoholism were largely neglected. A parallel situation will inevitably arise in the psychedelic field if we permit ourselves to dissipate time and effort in controversy rather than applying our knowledge to best advantage. Paradoxically, while there is a need to avoid the tragic waste entailed in controversy, there appears to be an equal need to stand firm in our convictions.

4. A subject of concern to us is the increasing number of requests for psychedelic information from persons who are clearly desirous of using these agents. Incalculable hours have been devoted to screening these inquiries in an attempt to determine the motivation and qualifications of those wishing to enter the field. An invariable part of our advice is that experimentation, without first undergoing an "experience" with competent supervision, and otherwise profiting by the knowledge of those already familiar with the subject, is a very unwise course. To a large extent this is hollow advice since there is not, to our knowledge, any center offering opportunities for such orientation.

We are quite prepared to open our facilities for training, but at the present time there are many practical limitations to that which we can offer. The alternative, which would be to refer "applicants" to other workers who might be able and willing to assist, is virtually impossible. If there were a "directory" of therapists, or centers, in which psychedelics are used, together with a resume of techniques, facilities and other pertinent

information, it might be possible to stimulate rather than dampen interest; to reduce the needless hazards of trial and error experimentation; and to further the serious study of this subject.

5. Reference has already been made to the state of jeopardy facing the psychedelic field in North America. Although the psychedelic literature is now extensive, and papers of high quality are appearing with regularity, those who are most vocally and effectively critical are either unaware of, or unwilling to consider, the facts and implications available. Perhaps those of us now assembled should consider the problems of "communication," of influencing attitudes and policies within the profession and at appropriate government levels.

There is evidence of an inverse relationship between knowledge and experience, and a willingness to reach unwarranted conclusions and dogmatic derogatory positions. It is improbable that we can exert much influence in the field of sensational lay journalism, but an "information service," or a resource able to speak authoritatively on errors perpetuated by members of the various professional disciplines may assist in rehabilitating the psychedelic image.

To this end we would propose the formation of a North American (or international) association. Such a group, although probably incapable of enforcing standards or taking disciplinary action, could at least set forth goals and principles to which members would subscribe. Even the nucleus of such an association, as for example, a committee to explore organizational problems and propose formal steps to be taken at a subsequent conference, would, in our opinion, be a suitable subject for discussion and deserving of priority at this conference.

Summary

The following points are worthy of special consideration.

1. Evidence has been offered relevant to the long term impact of psychedelic therapy in a large number of cases.

2. A method of therapy has been described which entails minimal risks and provides substantial benefit.

3. A rationale has been given for the use of psychedelic therapy centered upon its abreactive properties.

4. The need for high standards and for tolerance among opponents and proponents has been stressed.

5. A proposal has been made that *active consideration* be given to the merits and methods of establishing an association in order to further the objectives, standards and communication in the field.

APPENDIX

Patient Deaths

During the six-year period which has elapsed since the original 100 cases were treated, fourteen patients from this group have died.

In presenting the following case vignettes, we wish to review the

facts briefly in anticipation of an interest which has been evidenced already by the number of inquiries on this subject that we have received. There is little doubt that much of this interest has been generated by a few reports in which an implication of a psychedelic causal relationship is made. Such a relationship is not apparent in our group.

Two of the deaths (cases 76 and 95) may be classified as suicides, but to attribute these to the effects of therapy is a conclusion unwarranted by the facts.

Case 27 has been reviewed at considerable length because of the patient's advanced age (75); diagnosis (depressive reaction, involutional type); and recovery, despite a very unfavorable prognosis. (The patient died of cancer four years after recovering from depressive reaction.)

Case 1

Male, age 38, married (separated), university education, high socio-economic status, diagnosed chronic anxiety state with alcoholism. Drinking problem evident for 15 years prior to treatment; pattern, daily excessive (spirits). No record of treatment of alcoholism prior to admission September 1958, and no acceptance of his condition. Nine admissions for alcoholism following psychedelic therapy. Died in 1963, cause unconfirmed, but reported to be "associated with drinking."

Progress classification: "Unchanged."

Case 3

Male, age 43, married, average socio-economic status, diagnosed depressive reaction with alcoholism. History includes one suicide attempt (carbon monoxide) prior to psychedelic therapy. Drinking pattern mixed daily excessive and bender type. Two admissions for detoxification prior to first therapy; three admissions for detoxification prior to second therapy; total abstinence and marked improvement in all areas recorded until death. Died 1960; cause of death, leukemia.

Progress classification: "Much Improved."

Case 5

Female, age 44, married, housewife, low average socio-economic status. Diagnosed depressive reaction with alcoholism and barbiturate addiction. History includes one suicide attempt (drugs). Drinking pattern primarily bender type when drugs unavailable, otherwise daily alcohol use in combination with drugs. Alcoholism apparent for 10 years prior to therapy but masked by dual addiction. Many unsuccessful attempts to derive benefit from other treatment resources. Received psychedelic therapy on two occasions with little apparent benefit. Died six weeks after therapy; cause, cardiac failure during excessive drinking episode.

Progress classification: "Unchanged."

Case 10

Male alcoholic, age 43, married, average socio-economic status. Thirty-five admissions to hospital for detoxification, admissions to Pro-

vincial Mental Hospital and other treatment facilities known. Received psychedelic therapy on two occasions with only transient benefit. This patient deteriorated physically, mentally and socially. Drinking pattern, daily excessive including methyl alcohol and commercial preparations; also used "medications" indiscriminately. Died January 1964, cause of death, cirrhosis of the liver.

Progress classification: "Unchanged."

Case 12

Male, age 47, married, university education, M.D. degree, high socio-economic status. Diagnosed chronic alcoholism. Drinking pattern daily excessive, problem evident for 16 years, delirium tremens on five previous occasions, considered to have deteriorated despite many treatment attempts from various resources. Following therapy patient had one drinking bout, then maintained sobriety and improved in all areas. Died March 1963; cause of death, coronary thrombosis.

Progress classification: "Much Improved."

Case 16

Male, age 53, married, grade nine education, high average socio-economic status, diagnosed chronic alcoholism. Drinking history of 33 years with problem evident for 25 years prior to treatment; pattern mostly bender type. Many previous hospital admissions and attempts to obtain therapy from other sources. Received psychedelic therapy on two occasions with benefit following the second. Died in 1961; cause of death, gastric carcinoma.

Progress classification: "Much Improved."

Case 27

Male, born 1884, married, moderate drinker. First treated 1949, for "depression" with reference made to "stomach trouble." Hospitalization was brief and uneventful; responded well to ECT, and discharged "recovered." All symptoms appeared to be in remission for six years, but in 1955 his stomach complaints became more pronounced and ideas of unworthiness were developing. Six weeks after the appearance of symptoms he was diagnosed as a depressive psychosis of the involutional type and admitted to hospital for one month during which a further course of ten ECT's was administered, resulting in discharge as "recovered." Again symptoms appeared to be in remission for a protracted period. For five years the patient functioned well, socially, vocationally and emotionally.

In February 1959, readmission became necessary following the rapid onset of agitation, anxiety and depression. Although the patient at first appeared alert and without confusion or disorientation, it soon became apparent that he was experiencing definite auditory hallucinations with delusions of guilt, unworthiness and impending punishment.

Physical examination of this 75-year-old man revealed *arcus senilis* Present in both eyes. There was some tenderness in the epigastrium and left hypochondrium. Blood pressure 170/70 variable. TPR 93.3, 84, 20. X-ray

examination of the gastrointestinal tract showed no evidence of abnormality. Electro-cardiogram was suggestive of myocardial ischemia. Laboratory examination showed white blood count of 6,800; Hb. 13.05 grams; a Westegren Sedimentation of 19; urine negative.

The patient was placed on tranquillizing medicants and the required sedation for insomnia. Two ECT treatments, using pentothal, anectine and oxygen, were given subsequently but the immediate reaction was so unfavorable that these were discontinued. A course of psychic energizers was given, but the patient continued to be very depressed, miserable and mildly agitated. He required a great deal of persuasion to take any food, and his weight dropped steadily from 139 pounds on admission to 111 pounds on April 4th. On April 5th, 1959, he wrote farewell messages to the staff: "I have fought for life to the last, but I have lost. Heartbroken and sorry. The good Lord placed a punishment on me, through my stomach, three days before I entered this institution where I knew hopes of recovery were nil, and I have been disallowed to obey his commands, and through my useless stomach I am now at the end of my natural life. For God's sake don't torture me any more. My stomach has killed me. I had a pleasant dream last night and thought I had a plan whereby I could change all things, and return to a new life and to see and visit the many ones I dearly love, and am forced to leave."

A staff conference was held and in view of the poor prognosis it was thought it might be worthwhile for the patient to undergo the LSD 25 experience.

The patient was given the LSD 25 experience on April 10th, 1959, using the technique described in the body of this paper; 400 mcg of LSD 25 were given by mouth diluted in a glass of water. One half hour later the onset of the experience occurred; it reached its height in a further three quarters of an hour, continuing for three hours. At the time of onset the agitation and gross spasmodic movements of his extremities lessened.

Three hours after the administration of the LSD 25 the agitation had disappeared and the patient became relaxed. He did not speak during the experience, and at the end of seven hours he stated he had been traveling but did not wish to talk about it. An hour later he was resting quietly, and said he wished to thank all the staff for their kindness to him. He was returned to his room under the care of a nurse who had undergone a successful psychedelic experience previously. During the evening of the experience he sat quietly in a chair and expressed appreciation for the care he had received, and was very apologetic for the problem in nursing he had caused. His only comment was, "That was quite an experience."

Next morning he ate his breakfast without prompting. He was able to answer a questionnaire in regard to his experience and said the drug opened all corners of the world to him, and he even saw the end of the world. He stated that throughout the experience he had a continuous pain in his stomach and further, that he seemed to be under some other power and had no control over his own body—"It was such a strange world that I had no control over anything." Two or three times he stated that he had felt he was dead—at times in heaven, and at other times in hell. The messages during the experience were more vivid than the original commands not to eat. He stated that the pain had now disappeared from his stomach.

The next few days he busied himself, writing letters to relatives. While his obstipation continued he was looking forward to his meals and

ate them without misgiving. His progress continued in an uneventful manner; his weight increased to 128 pounds; he was pleasant, cheerful and sociable. He spent considerable time in composing poems of appreciation to members of the staff.

The patient was discharged from hospital May 7, 1959, and monthly follow-up visits for one year indicated that his recovery was stabilized. Periodic contact was maintained until his death from cancer in 1962 at age 79, with no signs of depression, agitation or further delusionary patterns.

Case 50

Male, age 73, widower, high school graduate, high socio-economic status, diagnosed chronic alcoholism. Drinking problem evident for 45 years prior to therapy; pattern, daily excessive (spirits). Forty-two admissions to hospital for detoxification prior to therapy, and six admissions after. Drinking pattern changed to relatively long periods of abstinence punctuated by brief benders. Several of the post-therapy admissions were deliberate requests to avert onset of prolonged drinking. Marked improvement in other life areas was noted. Died 1962; cause of death, bronchogenic carcinoma.

Progress classification: "Improved."

Case 66

Male, age 40, married, first year university education, high socio-economic status, diagnosed chronic alcoholism and barbiturate addiction. Drinking problem evident for eight years prior to therapy, pattern daily excessive (spirits) plus excessive use of barbiturates and at one period 1000 mg daily of Miltown, Largactil or Sparine as well. Two admissions for detoxification prior to therapy. Patient died in 1963, under unusual circumstances. Death reported due to poisoning from a leg infection, but the body was lost at sea.

Progress classification: "Unchanged."

Case 69

Female, age 40, married, high school education, high average socio-economic status, diagnosed chronic alcoholism. Drinking problem evident over 16 years, with 12 admissions for alcoholism prior to therapy, and 22 admissions following. Died in 1964; cause of death *delirium tremens.*

Progress classification, "Unchanged."

Case 76

Male, age 40, separated, grade six education, high average socio-economic status, diagnosed chronic anxiety neurosis with periodic alcoholism. Long record of treatment in Provincial Mental Hospital variously diagnosed as paranoid schizophrenic and catatonic schizophrenic. Drinking pattern evident for six years and primarily bender type (spirits). Received psychedelic therapy on five occasions over three years. Total abstinence followed the first psychedelic therapy and subsequent treatment was relative to residual problems. In 1964 the patient experienced an

acute business reversal (loss of a large shopping center in bankruptcy) and died of carbon monoxide poisoning (suicide).

Progress classification: "Unchanged."

Case 95

Female, age 45, married third time, two years at university and obtained an R.N. degree subsequently, high socio-economic status, diagnosed chronic anxiety neurosis with alcoholism and barbiturate addiction. Drinking problem evident for 20 years prior to therapy with dual addiction apparent for 10 years. Drinking pattern mixed daily excessive and bender type in combination with barbiturates. Many admissions to various treatment resources for detoxification prior to psychedelic therapy. Died 1959; cause of death, barbiturate poisoning (suicide?).

Progress classification: "Unchanged."

Case 97

Male, age 60, married, university education, practising lawyer, high socio-economic status, diagnosed as chronic alcoholism. Drinking problem evident for 25 years prior to treatment; pattern mixed daily excessive and bender type. Several admissions elsewhere for detoxification prior to psychedelic therapy. Died in 1963; cause of death, coronary thrombosis.

Progress classification: "Unchanged."

Case 102

Male, age 62, widower, high-school graduate, average socio-economic status, diagnosed acute alcoholism. Drinking problem recognized at age 22; pattern bender type. Nineteen admissions for detoxification prior to therapy, 11 after. Died 1962; cause of death, coronary thrombosis.

Progress classification: "Unchanged."

DISCUSSION

Dr. McGlothlin: It is my understanding that psychedelic therapy for alcoholics has been approved in Saskatchewan. Is that true?

Dr. MacLean: Well, I don't know. I think I'll let Dr. Hoffer answer that. I thought it was true.

Dr. Hoffer: It is difficult to say "approved" because it would be approved by us, practically speaking. I work for the Provincial Government in the Department of Public Health. It is part of our policy to give LSD therapy if in our opinion it is indicated. At the last Annual Meeting of the Saskatchewan College of Physicians and Surgeons, it was requested that the College Committee include in the fee schedule the use of LSD. So I would say, in general, that the physicians in Sas-

katchewan have approved of this treatment when it is used by qualified people.

Dr. Levine: In view of the excellent report that you gave us in terms of the treated patients, have you any comparable figures for either untreated patients or patients treated with other methods, such as Antabuse or conditioning techniques?

Dr. MacLean: We haven't reported it in this paper, but we made quite a few studies.

Dr. Levine: Could you give us any idea now about what the differences in percentage would be at the various times that you give for the treatment for the category, "Much improved"?

Dr. MacLean: I would say that using psychedelic therapy we would probably get results twice as good when compared with the group that didn't have any.

Dr. Levine: This data is available?

Dr. MacLean: Not yet, but it will be published.

Dr. Fremont-Smith: This is your current impression but not based on an actual study?

Dr. MacLean: That is right. I would like to point out once again that our results are judged on the basis of clinical judgment. I am not yet convinced that double-blind studies or certain "controlled" methods are superior to clinical judgment as mentioned by Dr. Fremont-Smith earlier. My feeling, of course, is that clinical judgment is most valuable. Perhaps it is up to those who feel that other techniques of controls are better to prove to us that they are better.

Dr. Rinkel: May I ask just one question? Did you have any failures? If you did have any failures, how did you explain it?

Dr. MacLean: Why we have failures is a question which I wanted to ask myself but couldn't here. Yes, obviously we have had failures, since only a fraction of our treated cases improve. In some of our alcoholics we have cases where we used these materials several times and apparently didn't get very good results. I could say, though, that in the cases where we repeated the use of the psychedelic drug, we tended to get somewhat better results. I remember that we have treated some elderly alcoholics that were around 60 or 65 who were beginning to undergo degenerative processes. I felt that these were failures. These were men who were really deteriorated. Yet they seemed to be reasonably well motivated.

Dr. Arendsen Hein: I wonder if you could discuss after-care problems. It strikes me that many people speaking about treatment of alcoholics and comparing different views on treatment fail to deal with the period of after-care. Even if the psychedelic experience in the alcoholic produces a complete new feeling of being a different person, it must influence every other experience in his life. The period of adaptation in society must meet with considerable difficulties. There are problems to be solved. We should all think, in my opinion, in terms of proper after-care over a long period of time, at least half a year. I understand for

research purposes, one doesn't go in for that. But I wonder if you could say from your experience what results you have had.

Dr. MacLean: We try to see our patients. We do see them the day following the experience. We try to start working through some of their problems, and we try to see them weekly, providing they are willing to come back. Then we taper off according to the individual. We have also recommended to alcoholics, whether they have had a good experience or not, that they go back to A.A. if they have already been in A.A. Quite a few of them report that they get better results, with increased understanding. We have had many alcoholic patients who are somewhat improved. That is, their drinking is considerably less than it was before. Yet we feel they are improved. I certainly would agree that these men and a few women whom we have treated do need follow-up care. We try to do that as much as we can.

Dr. Grof: I want to go back to Dr. MacLean's paper. First, what is his opinion about mechanisms involved if LSD is used in the one single overwhelming dose? Are the same mechanisms involved as in psycholytic therapy? Is the process only accelerated by using the higher dose? Are other mechanisms involved, like reliving of infantile experiences? The second question is concerned with the use of universal symbols. I was very interested in this question when I read one of your previous papers, and today in the discussion I notice that you do not use it any more, but I would like to know why you abandoned this course.

Dr. MacLean: I can certainly see that we have given less emphasis to this, to try to answer your second question. I think in my early days of using LSD I seemed to see quite a bit of this material that is coming out and it could be associated with Jungian philosophy, psychology, or sometimes with Freud. It is quite possible that at that time my orientation was such that possibly I favored that approach. I don't know really, but there are so many unanswered questions within the range of normal attitudes. But it has always interested me a great deal that many patients who are going through one of these experiences do bring out symbolic formations from the unconscious. And I think I was tempted to put particular interpretations on this. I don't any more, or state what I felt they were. I do feel that this is quite a field for study and I do not have a final answer for your question. In trying to answer your first question, I would say that invariably alcoholics have tremendous resistance. This is noted with other drugs also. We have noticed this particularly with alcoholics to whom we have given LSD. The dosage we would use would vary somewhat. We put a man through this as part of his total experience with LSD, mescaline, or the two combined. Practically always we considered increasing dosage if he couldn't break through some of his defenses in his first experience. We have often tended to use with alcoholics a combination of LSD and mescaline to help them prolong this experience from, say, an average of six hours with LSD to (using both of these) ten or twelve hours. I think there is an advantage in that with some patients. I think that partially answers your question.

Dr. Van Rhijn: I see that in your paper, you raise the question of the formation of a North American or international organization. Such a group, although probably incapable of enforcing standards or taking disciplinary actions, would at least set forth codes and disciplines. A year ago there was an International Conference in London. We were together there to propose the same type of association. Were you there, perhaps?

Dr. MacLean: No, I wasn't.

Dr. Van Rhijn: I would think that an international association would be very useful. While we were in London, we thought we could perhaps set up rules, etc., for such an association. A name has already been coined: "The International Medical Society for Psycholytic Drugs," and perhaps this is also what you have in mind.

Dr. Fremont-Smith: May I make a comment at this point? Not in respect to the association, which might be a splendid idea; but I do want to comment on what Dr. MacLean said, as well as on the previous discussion about the situation regarding the use of LSD and similar drugs in the U.S.A. I'm fortunately not in practice at the moment and can speak fairly comfortably about what I happen to feel. I feel that the situation is thoroughly unsatisfactory, as far as the use of these drugs and their exploration in this country are concerned. I'm not saying that some form of restriction may not be necessary with certain drugs. Many drugs currently readily available are equally dangerous, and more dangerous than LSD. I have watched some thoroughly capable clinicians and investigators make strenuous long-time efforts to be able to continue their outstanding research which was sometimes the most advanced work in the field, and have watched their failure to get permission to do so because of the clumsy interrelationships between the government and the pharmaceutical houses involved. I don't think anybody is particularly to blame; I think the clumsiness is in the interrelationships. The situation is one which is thoroughly unsatisfactory, and one which restricts reliable research by reliable people at the present time. I think we will probably come back to some further discussion of this. I just want to go on record that I thoroughly disapprove of our being in a situation where people who are reliable and who have shown confirmed reliability in research are unable to proceed with their research, and where new people cannot come into the field excepting under curiously narrow and restrictive arrangements.

Would you like to close, sir, and then we will go on to the last paper of the afternoon.

Dr. MacLean: Although it may sound as if we are trying to emphasize what someone here describes as a one-shot deal, it is actually not that. We try to incorporate this special day of LSD treatment (or, if it is repeated, a second day of treatment) into the whole regime, in order to try to understand this person. And to help him to understand himself!

A Comment on Some Uses of Psychotomimetics in Psychiatry

Humphry Osmond, M.R.C.S., L.R.C.P., D.P.M., F.W.A. *

I do not think that it has been emphasized sufficiently how valuable LSD 25 and mescaline, for instance, have been as psychotomimetics. Our greater understanding of the experience of schizophrenic patients, derived from studying the madness-mimicking effect of these substances, has enabled us to do things which might have been impossible otherwise. Since many discussions of psychedelics and psychotomimetics deal largely with their potentials, it may be as well to familiarize ourselves with some of their actualities.

1. We have been able to devise much better hospitals for mentally ill people. Working closely with my friend, Kyo Izumi, a Canadian architect from Saskatchewan, we developed a new formulation for mental hospitals in terms of what we have called socio-architecture. Parts of at least five mental hospitals have now been built using these ideas. Of the Saskatchewan Hospital, Yorkton, Saskatchewan, designed by Izumi himself and his partners, the Joint Information Service of the American Psychiatric Association wrote (1) "Kyoshi Izumi, a pioneer in psychiatric architecture, designed the physical structure, and designed, or in some cases specified, all the furnishings. The result must certainly rank among the most attractive and architecturally advanced buildings ever constructed for psychiatric services... as for the physical plant, it was a pleasure to view a facility that was more than merely new. Creativity and imagination were evident in scores of details. We felt the wards and day rooms combined efficiency with comfort and cheerfulness to a very exceptional degree."

To my knowledge, Mr. Izumi himself took LSD 25 on several occasions so that he could explore the effect of perceptual anomalies upon his experience of space, time, color and texture. While doing this, he took particular notice of certain kinds of architectural configurations. These experiences of his, along with my own, combined with perceptual studies by our colleagues, Drs. Weckowitz and Sommer, and extensive reading of the writings of mentally ill people formed the basis of our original formula-

* Director, Bureau of Neurology and Psychiatry, New Jersey Neuropsychiatric Institute, Princeton.

tions and thus of his splendid designs. Psychotomimetic experiences have thus been used for the benefit of the mentally ill, and also of the well people who work in hospitals. In addition to this, some of the principles which we have discovered are also being used to develop a better kind of living accommodation, particularly when large numbers of people have to live in a communal building. It may be argued that Kyo Izumi, an unusually gifted person, would have done this just as well without the use of LSD 25. I do not know how this could be proved or disproved, but I do know that both he and I believe that it played a crucial part in deepening our understanding of the problem and so enlarging the communication between us. The fruits of this collaboration are there to be judged by any who care to go and look at them. It is not frivolous to say that here, indeed, are some of those concrete results of the psychotomimetic experience which critics have been so keen to discover.

2. Because we came to believe that psychotic people were cut off from the outer world by changes in their perception, which they could not readily describe, and did not necessarily understand, we began to pay close attention to their *umiwelt,* or experiential world. It became evident that due to a professional preoccupation with the "meaning" of their experiences, the experiences themselves were often almost completely neglected. Patients who, for instance, described the world as looking different were usually supposed to be saying that it was feeling different. In other words, their perceptual anomalies were ascribed to some change of mood or effect. For many years little interest had been paid to the actual experiences of the ill and the social consequences which might derive from them. To explore these experiences more thoroughly we developed the Hoffer-Osmond Diagnostic Test, or HOD, (2) which is an exceedingly crude, but unexpectedly effective instrument for exploring the *umivelt* of schizophrenic and other patients. This is already showing considerable usefulness. An ex-schizophrenic patient once remarked, "I wish you had had this test when I was ill. I would have known you knew something about my illness."

3. The HOD, combined with our interest in psychotomimetics, has led to new and very exciting developments in the use of hypnosis by Fogel and Hoffer (3) in Canada, and Aaronson (4) here in Princeton. Because we ourselves had experienced marked changes in perception and had listened to our patients reporting similar happenings, it was easy to suppose that, however they were produced, they might have many interesting effects. A great advantage of hypnosis and post-hypnotic suggestion is that it can be used to study in a very detailed way the effects of clear-cut and circumscribed perceptual anomalies. Much work of this kind is now in progress, and while it is time-consuming and demanding, it seems that it will be a very potent tool for exploring the psyche. Aaronson noted with some surprise that he had been unable to predict what the psychological effects of a particular set of perceptual changes would be and suggested that substantial revisions of our theories of personality may become necessary. In the course of this work, Hoffer and Fogel have found that in some

subjects the LSD experience can be evoked without LSD and, even more surprising, that the effects of the drug can be almost totally repressed, by post-hypnotic suggestion.

4. Mescaline, LSD 25, etc. have great possibilities for training psychiatrists, psychologists and others, who are then less likely to produce standardized answers for their patients' distresses. Many psychiatrists suppose that, because they have devised or accepted from others an explanation for the patients' behavior which makes sense to the therapist, they understand what has been happening to their patients. This, however, is often not so and the psychiatrist's too ready assumption of omniscience, although it may be reassuring to him, simply prevents him from listening to the patient's halting, but often quite accurate explanation.

Miss Norma McDonald (5), herself a sufferer from schizophrenia, wrote, "One of the most encouraging things which has happened to me in recent years was the discovery that I could talk to normal people who had had the experience of taking mescaline or lysergic acid, and they would accept the things I told them about my adventures in mind without asking stupid questions or withdrawing into a safe smug world of disbelief. Schizophrenia is a lonely illness and friends are of great importance. I have needed true friends to help me to believe in myself when I doubted my own mind, to encourage me with their praise, jolt me out of unrealistic ideas with their honesty and teach me by their example how to work and play. The discovery of LSD 25 by those who work in the field of psychiatry has widened my circle of friends."

Schizophrenics are lonely because they cannot let their fellows know what is happening to them and so lose the social support, help and encouragement which they need so much, yet so rarely evoke. LSD 25, used as a psychotomimetic, allows us to study these problems of communication from the inside and learn how to devise better means of helping the sick. This, combined with the HOD and the hypnosis work, allows us to reduce the alienation of these very ill people. We are no longer forced to suppose that the experience of the schizophrenic person must always be harmful; indeed, there is growing evidence that the psychosocial variability which they endure, although dearly bought by the individual, may be valuable and even necessary to society, especially during times of great change.

5. Our early work on alcoholism (6) was based on the idea that it might be helpful to produce a condition resembling *delirium tremens* and so allow the patient to "hit bottom" earlier than he might otherwise do. Later, after we had become aware of the possibilities of the psychedelic experience, and had exchanged ideas with Dr. A. M. Hubbard of Vancouver, one of the pioneers of psychedelic therapy on this continent, we changed directions. Nevertheless, the original impetus came from our interest in the psychosis-mimicking experience.

These few illustrations show that these remarkable substances have already impinged on psychiatry in a positive way, quite apart from their extensive and very interesting use in psychotherapy. While I would be the

last to discourage investigators from exploring that huge panorama which sweeps from the creative to the transcendental experiences, I would urge that we continue to study carefully and intensively some of the rather mundane matters which I have noted here. While there may be marked similarities in the ultimate experiences of birth and death, and while it is valuable to recognize that we have much in common, the fact is that our day to day experience of the world, each individual *umwelt*, can be surprisingly dissimilar. It is often these dissimilarities—unrecognized, and until we develop better means of acquainting ourselves with them, unrecognizable—that lead to the greatest and often most tragic failures in communication. Life, like art, is in William Blake's words, "a matter of minute particulars." We must accept, however difficult it may be to do so, that the "minute particulars" experienced by one person may be very different from those experienced by other people, even though they may be very close to him. By patience, determination and skill, we can perhaps develop "universal particulars" in which many more can share, and know that they are sharing. To do this we must start with very simple matters and discover the various ways in which each one of us builds a world comfortable for him, but more or less incomprehensible and sometimes even grotesquely strange for others.

Some Problems in the Use of LSD 25 in the Treatment of Alcoholism

Humphry Osmond, M.R.C.S., L.R.C.P., F.W.A.,* Robert Albahary, M.D.,* Frances Cheek, PH.D.,* and Mary Sarett*

Alcoholics have been treated with LSD 25 and similar psychedelic substances for about a decade. Various settings have been used, ranging from carefully contrived situations in which the people, the setting, even the design and furnishing of the room have been aimed at giving the maximal support and reassurance, to starkly "experimental" surroundings in which patients have been treated like less fortunate laboratory animals. The results reported have varied from no change to very encouraging. There have been few accounts of alcoholic patients being made worse or damaged by this treatment, but this may be because most of those selected for it have usually not responded to other forms of treatment.

It may seem surprising that after ten years there should still be so much controversy as to whether LSD 25 helps some alcoholics or not, but there are many reasons for this.

1. Few psychiatrists like treating alcoholics.

2. Many alcoholics are suspicious of psychiatrists—both these factors are losing force, but their legacies remain.

3. Few psychiatrists are competent or experienced in the use of LSD 25.

4. Among those who like treating alcoholics and know how to use LSD 25 effectively, not all by any means are interested in undertaking experiments designed along lines that satisfy the current views of medical scientists. This prejudice, shared by many clinicians, has traditional, ethical and professional ramifications, which, although rarely either understood or respected by scientific workers, can be defended with surprising cogency and aptness by clinicians who are well informed about medical history.

* Director; Chief, Section of Experimental Sociology; Director, Psychiatrist in charge of the Alcoholic Treatment Unit; Research Assistant, respectively, Bureau of Research in Neurology & Psychiatry, Princeton, N.J.

5. There are massive disagreements among competent methodologists about designing psychiatric experiments, so that, while a particular methodologist can appear to suggest that he knows of a "simple" design which can easily be employed, good reasons for not using every one of the most popular methods have been advanced.

6. The isolation of significant factors in many treatments and their objective evaluation is difficult, time-consuming and very expensive.

7. Even when such factors have been isolated, there is still room for debate as to what constitutes acceptable proof that they have been specifically effective.

8. One consequence of this is that it is very difficult to replicate another person's work, because one cannot be sure that the patients involved and the methods used are indeed identical.

However, there are enough very sick alcoholics in the world to require that we make strenuous efforts to develop better treatments than those which exist today. LSD 25, when used by experienced people in a hospital, has been shown to be very safe, and provided that schizophrenics are eliminated, even those who are not benefited are not harmed. A safe treatment, even of limited efficacy, may be preferred to a more effective but dangerous one.

The very restricted money at our disposal made it essential for us to develop a treatment set which made the most of our assets and minimized our deficiencies. Our assets were a steady supply of severely ill alcoholics, our liabilities a lack of sufficient specialized staff. However, this is, in fact, the situation which confronts most of those who treat alcoholics in mental hospitals, so that we felt we would certainly learn something useful from a study of this kind.

Our treatment set was designed to take into account the special nature and needs of alcoholics, based upon our clinical observations, discussions with members of Alcoholics Anonymous, combined with careful reading of their publications, and a scrutiny of current technical sources.

By and large it seems that many alcoholics are socially apt people who tend to be seekers for group status, of traditional habits with a tendency to be conforming and moralistic. Many of them seem to be preoccupied with the "me," the social mask, persona or role-holding self at the expense of the "I," the interior, self-aware and interior witnessing self. The submerging of the "I-witness" by the "persona" or social mask produces substantial rewards, particularly in early adult life, which may account for the early success which many alcoholics seem to enjoy. Yet this success is achieved at the expense of great uncertainty and inner tension, for, lacking much capacity for inner scrutiny and self-evaluation, these "persona" people must seek the constant reassurance and approval of friends, relatives and associates that they are in fact doing well and that they are really successful. They require constant affirmation that they are socially acceptable, and in this respect are bound to become highly sociable. When for whatever reason, affirmation and approval is

either not forthcoming or is felt to be insufficient, their fears and tensions rise quickly and often unbearably.

In societies where alcoholic drinks are customarily used and among those who are robust enough to become habituated to this dangerous tranquilizer for years on end, alcoholism is liable to occur. Alcohol is indeed an effective tension-reducing agent, but it has disadvantages. We are not suggesting that all alcoholics can be adequately accounted for in this way, but we do suggest that this is as serviceable a model for this illness as most in use today.

In our study we attempted to give our alcoholic patients an experience of the witnessing "I," which would encourage them to take stock of their "persona" and so make it easier for them to change their ways. Alcoholics have frequently reported such experiences occurring spontaneously and have described them vividly. They have played a part in many recoveries —indeed Alcoholics Anonymous is the substantial and abiding fruit of one of them.

With this in mind, we used A.A. as a model; wherever possible we employed A.A. language and concepts and fitted our program into the A.A. Twelve Steps with which many of the patients were already familiar. For example, Step one, "Know thyself," is equivalent to self-knowledge through LSD; Step four, "Daily review," equates with our monologues while looking into a mirror; Step six, "Help others," is equivalent to alcoholics who have taken LSD assisting and lending support to those being initiated. Also, we strongly advised the alcoholics to attend A.A. when they left the unit, and prior to their leaving we brought in A.A. members to support this suggestion. In this way we hoped that the new social roles we had helped our alcoholics to create would be reinforced and maintained after discharge.

Thus we hoped we had built a kind of psycho-social trap, especially baited, from which it seemed our patients could hardly escape. As we shall see, some were caught and some slipped out. But before we examine what happened, let us describe the trap.

METHOD OF PROCEDURE

The study was conducted at the Earle Alcoholic Unit at the New Jersey Neuro-Psychiatric Institute, at Princeton, New Jersey. During the period April through August, 1963, 28 alcoholics were administered two doses of LSD 25 (100 mcg and 200 or 300 mcg) and took part in an especially constructed program of group therapy. Their outcome was followed at three, six and twelve month intervals, and compared with that of a group of 34 alcoholics who took part only in the regular program of the Alcoholic Unit.

The Setting

The Earle Alcoholic Unit is a forty-bed cottage devoted exclusively to the treatment of chronic alcoholism, situated on the grounds of the New

Jersey Neuro-Psychiatric Institute at Skillman. It is directed by a board psychiatrist and includes on its staff one half-time resident, two social workers, one half-time psychologist, and five attendants. The usual daily census is close to thirty, and only alcoholics who will agree to a six-week stay and otherwise give evidence of good motivation are admitted. Overtly psychotic and obviously organic cases are excluded. The standard program includes group and individual therapy, educational programs including A.A. discussion, movies, pastoral counseling, occupational and recreational therapy.

The LSD work was carried out on Tuesdays and Thursdays of each week from 8:30 to 4:30 in the unused third floor of the cottage, consisting of one large room and six smaller rooms opening from it. At the time the study was begun, the rooms were poorly decorated and shabbily furnished, but as the work progressed they were made more attractive with new furniture, curtains, rugs, prints on the wall, etc. The prints were selected for their suggestion of mystical or typical familial or developmental experiences. These prints had a specific use in the treatment program which will be described later.

On any treatment day there were eight patients on the third floor, two under LSD. The men were allowed to sit in the large room, or go off by themselves to the smaller rooms. Music was played on a phonograph for 30-minute periods of every hour, responding to requests of the men when possible. In the early part of the morning, stirring, exciting music was played; in the mid-morning, mystical, contemplative music; in the afternoon, selections were dramatic and integrative.

Personnel of the Project

The LSD project was directed by a research psychiatrist and run with the collaboration of a research sociologist, a sociological assistant, and a psychiatric technician from the regular staff of the Alcoholic Unit, assigned to the LSD program. The rest of the regular staff of the Alcoholic Unit were kept fully informed with regard to the project, and assisted in various ways when necessary and appropriate.

The Subjects

Each week, about five or six patients were admitted to the Alcoholic Unit. The psychiatric technician assigned to the LSD program had the task of explaining the program to all new admissions and asking for volunteers. Those who volunteered were then screened by the psychiatrist in charge of the Unit for physical problems such as liver or heart disease or other complaints which might be contraindicative for LSD treatment, as well as for gross psychotic symptoms. Four were selected to enter the LSD program one week, and the next week four volunteers were assigned to the comparison group.

In the course of three or four months, 28 patients had taken part in the LSD program and a comparison group of 34 patients had been

selected. The comparison group was slightly larger because it was felt that attrition would be greater in this group in the follow-up study.

The age range of the subject in the LSD group was 29 to 65; the median age was 40. In the comparison group the age range was 27 to 64, and the median age 46. Twenty of the LSD group were married, four separated, two divorced and two single. Twenty-four of the comparison group were married, three separated, one divorced, one a widower, and five single. Five of the LSD group had eighth-grade education or less, 14 had attended high school, eight had college training, and for one subject, the information was not obtained. In the comparison group five had eighth-grade education or less, 24 had attended high school, while four had college training; for one subject the information was not obtained. Thus the comparison group was slightly older and not quite as well educated as the LSD group. Also, the LSD group contained a higher percentage with German ancestry than the comparison group (25.0 percent as opposed to 5.9 percent); and the comparison group contained a higher percentage with Irish ancestry than the LSD group (38.2 percent as opposed to 17.9 percent).

Supervision of Subjects

As mentioned before, the program was conducted on Tuesday and Thursday of each week from 8:30 in the morning until 4:30 in the afternoon. During this time the psychiatric technician assigned to the program was constantly with the group. The psychiatrist in charge of the Alcoholic Unit was always available in the building, and the research psychiatrist was also on call, though not in the building continuously. The research psychiatrist usually spent one or two hours with the men during the day, as did the sociologist, and the former also dropped in for a few hours each evening after the LSD had been given.

In addition, an important source of supervision for those who had been given the LSD was the group of patients on the third floor who had not had the drug that particular day. Only two men of the group of eight would have the drug on any treatment day; the others were asked to keep those on the drug under constant surveillance. They also were asked to give support in terms of companionship and reassurance, but only if it was requested by the subjects on LSD. In this way these men had an opportunity to learn more about the effects of the drug and how to make use of it. Giving support to others who had received the drug was a useful part of their own therapy.

If a man showed signs of severe discomfort in terms of physical distress or acute anxiety, the psychiatric technician was instructed to call the research psychiatrist. Thorazine and nicotinic acid were available in the Alcoholic Unit and could have been administered to counter the LSD effect within a few minutes. Only one, however, of the 28 men to whom the drug was administered requested that the drug effect be removed, although subjects were told routinely that this would be done if they so requested. The subject who asked for the antidote had had a severe panic

reaction, but the research psychiatrist managed to reduce his anxiety by talking with him, and the subject himself decided not to take the antidote.

THE DESIGN OF THE PROGRAM

The LSD Group

While the regular program of the Alcoholic Unit lasted six weeks, the LSD program took up only the four central weeks of this period. The scheduling of activities for the LSD groups during the four weeks is shown below.

SCHEDULE OF THE LSD PROGRAM

(Numbers indicate number of men in program under drug or non-drug condition on any day.)

	1		2*		3**		4	
	Tues	Th	Tues	Th	Tues	Th	Tues	Th
Group 1 No drug	4	4	2	2	2	2	4	4
Drug			2	2	2	2		

	1		2*		3**		4	
	Wed	Th	Tues	Th	Tues	Th	Tues	Th
Group 2 No drug	4	4	2	2	2	2	4	4
Drug			2	2	2	2		

* Dosage 100 mcg. ** Dosage 200 or 300 mcg.

This design was developed in order to accomplish certain very special aims. It insured that men to whom the drug had not yet been administered had an opportunity to observe others under its influence before they took it themselves. Thus they could learn its physical and psychological effects, how they were to make use of the experience, and how they might support and assist others, having the experience. Thus the group itself carried out an important part of the training and supervisory activities.

On Wednesday of their second week in the Alcoholic Unit, four men who had volunteered for the LSD program, and been assigned to it, were asked to appear at 1:30 on the third floor for their orientation session, which took about two hours. At this session the research psychiatrist explained to the novices the history of the use of LSD in the treatment of alcoholism, the nature of its effects, what might be expected from the experience, and how it might be used. The sociologist explained the design of the program and asked each volunteer to write an autobiography according to the following instructions:

Describe both your parents in terms of personality, how they got along, etc.

Describe the circumstances of your birth; any peculiarities. *Preschool—public school days:* how good a scholar; personality; social

relations; relations to siblings and parents, etc. *Early adulthood:* choice of occupation, adjustment to friends, other sex, relation to family. Marriage: (if applicable) When? Description of wife, children, relation to wife and children, etc. *Problems of occupation:* choices, success, financial situation, etc.

Describe drinking problem: when you first began drinking, under what circumstances, how it became a problem, what you tried to do about it, etc. Reactions of wife, friends, employees, your own self.

Describe present situation: occasion of entry to Earle Alcoholic Unit. How your family feels about it, how you feel about it. How you see yourself now and what you feel about the future.

The autobiography, of course, was intended to begin the examination of the "me."

The men were also asked to fill in questionnaires concerned with statistical and attitudinal matters, and each took a Szondi test. Every subject was asked to deliver, for tape-recording, three five-minute monologues concerning himself, his family, and the group with whom he was taking the LSD. Each subject delivered the monologues in a separate room, alone, and in front of a mirror, with the following instructions:

1. *Self*

I am going to ask you to tell me something about yourself. I would like you to look into this mirror, and for five minutes say aloud whatever thoughts about yourself come to your mind. I don't care what you talk about—your appearance, what sort of person you are, how you get along with other people, how other people might think or feel about you, just so long as you talk about yourself.
You don't have to hold the microphone. It will pick up very well, just lying on the stand. I will leave the room and return at the end of the five minutes. Do you have any questions?

2. *Other: Family*

Now I am going to ask you to tell me something about your family. For five minutes, I would like you to say aloud whatever thoughts about them come to your mind. You can talk about whatever you want, what sorts of people they are, how you all get along, how you might feel or think about them, just so long as you talk about your family. By family, I mean either your parents, or your wife and children, or both. Are there any questions?

3. *Other: Group*

Now I am going to ask you to tell me something about this group with whom you are taking the LSD. For five minutes, I would like you to say aloud whatever thoughts come to your mind about this group. You can talk about whatever you want, what sort of people these are, how you all get along with one another, how you might feel or think about them, just so long as you talk about this group. Are there any questions?

At the end of the orientation session the men were asked to draw lots to see which two would take the first dose of the drug on the next Tuesday and which two on Thursday.

On Thursday of this first week in the LSD program, the four new men were asked to report to the third floor at 8:30 A.M. and to remain there all day. At this time they joined the four alcoholics preceding them, who now were in their third week of the LSD program, and had an opportunity to observe two of these men take 200 mcg each of LSD. In this way, as we have said before, subsequent novices had an opportunity to see others take the drug before they themselves took it and thus to observe its physical and psychological effects. They were able to see how one could make use of the drug experience and how the men watching might help in this process. The men were told that they might sit alone, or talk quietly with one another. They might read, write letters, play cards or chess. Those taking LSD on any particular day, however, were advised to stay alone and be quiet, to allow the drug to take effect.

At 11:00 A.M. each alcoholic was asked to deliver another 15-minute monologue, as he had on the orientation day, and to fill in the Szondi test again. (The two men who had been given LSD were asked to speak last. It would be about 1:30 before they began; the early and most confused period was usually past and they were in better shape to talk about their experience.)

At 12:00, the research psychiatrist came to the third floor and walked around the room with each of the two men who had taken the drug that day. He asked each subject what he saw in the prints which hung on the wall and discussed the feelings and ideas which had been stirred up.

At 2:00 P.M. a group therapy session was held in which all eight alcoholics participated. Usually the research psychiatrist and the sociologist joined the group, but sometimes only the psychiatric technician was present. The group therapy session had several purposes: to allow each person to express relevant feelings and attitudes regarding the LSD 25 experience; to allow the group to share these feelings and attitudes; and to allow the group to work together to understand the LSD experience and profit from it. This was a highly structured but essentially leaderless group. At each session a mimeographed set of twenty questions was handed out to the men. Some of these questions related to the period before LSD, some to the period on LSD, and some to the period following LSD. Following are sample questions from each period.

1. *Prior to the LSD Experience*

"What do you expect the LSD experience will do for you?"

2. *During the Experience*

"Describe your experience so far."

3. *After the Experience*

"Why do you think we have told you that in order for this experience to be really beneficial you have to work hard at it?"

According to his status at that time, each alcoholic in the group was asked to comment on one question, or to bring up some other matter not

included in the questionnaire. The subjects were told that each was responsible for the following: (1) seeing that each person participated; (2) keeping the speakers relevant; and (3) helping each man to understand his own experience. At the start each person in turn talked for a few minutes on the topic or topics he had chosen. Then, in an open discussion, these matters were further pursued. In this way each member of the group had to participate, and all the group members contributed to a lively discussion in which the meaning and usefulness of the LSD experience in relation to alcoholism were clarified.

At 4:30 the men went downstairs. The men currently in the LSD program were not allowed to rejoin the activities of the Unit or to return to their usual beds that night. They ate their dinner and slept in a locked room adjoining the nurse's office. At 7:30 the research psychiatrist came to the Unit and discussed the day's experiences separately with each LSD subject.

The men who had not yet been given the drug were told that prior to their getting it on the next Tuesday or Thursday, the night before they must read over the autobiographies they had written and think over their past problems. This was so that areas of difficulty would be fresh in their minds at the time they took the drug. The "me" to be examined was thus brought into focus.

On Tuesday of the second week of the program the two men who had drawn first choice were each given 100 mcg of LSD 25 orally in distilled water at 8:30 A.M. This low dose was given to prepare the men for the heavier LSD dose to follow and also to evaluate how high a dose would be needed, for the drug effect is variable depending to some extent upon body structure and weight. They were instructed to sit quietly and allow the drug to take effect, rather than to participate in conversation or card games with the other members of the group; the others were allowed to read, converse, or play card games quietly. Additionally, they were required to watch over and support the men who had taken LSD when this was requested of them. The men who had taken LSD earlier provided an experienced group to assist the novices.

The regular program of the day was carried out, with music, the viewing of the prints, the tape-recorded monologues, the Szondis, and the group therapy. In the evening the research psychiatrist appeared for a review of the day's experiences.

On Thursday of the second week, the remaining two alcoholics of the new group had their 100 mcg dose.

The rest of the program was carried on as before.

As this was the last day of the program for the old group, they once again filled in the attitudinal questionnaires, and then were given their three-month follow-up appointments.

On Tuesday of the third week, the two group members who had been given LSD on the preceding Tuesday were now given 200 mcg. In some cases 300 mcg were given where the psychiatrist felt that the reaction to the original 100 mcg dose was too slight.

The program continued as before.

On Thursday the two group members who had been given LSD on the preceding Thursday, were given the 200 or 300 mcg dosage. The program continued as before, except that on this day a new group of four volunteers joined the program, and saw the 200 or 300 mcg administered.

On Tuesday of the fourth week the new group began their 100 mcg dose. The old group had a chance to help in this experience and also to review and integrate their own experiences, with the program continuing as before.

On Thursday of this week the new group continued their 100 mcg dose with the other men present and the program continuing as before.

At the end of the session the attitudinal questionnaires were filled in by the men who had completed the program, who then were given an appointment card for the three-month follow-up interview. It was strongly suggested to the men that they attend their local A.A. after they left the Unit.

The Comparison Group

As mentioned, every other week four new men were asked to volunteer for the comparison group, and the first four volunteers were taken.

On Wednesday of the first week the four new volunteers were asked to come to the third floor at 1:30 P.M. The purpose of the comparison group and the nature of their participation was explained. Each filled in the questionnaire, took a Szondi test, and tape-recorded a set of monologues.

On Wednesday of the fourth week at 1:30 P.M., the four men of the comparison group again were asked to come to the third floor, to fill in the attitudinal questionnaire, take the Szondi test, and tape-record the monologues as before.

They then were given appointment cards for a follow-up interview with the sociologist three months from that date.

The Follow-up Procedure

During the fourth week of the program, each member of the LSD group and of the comparison group was given a Saturday afternoon appointment, three months hence, with the sociologist at the research building (adjacent to the Alcoholic Unit).

Prior to each appointment, letters of reminder were sent. When the patient did not keep the appointment, an interview was conducted, by mail or telephone, with the alcoholic or a relative, which covered, though in less detail, the matters covered in the personal follow-up interview.

At this appointment the sociologist usually talked with the patients for a half-hour or so, and each was asked to fill in a questionnaire regarding attitudinal changes, family, work, social, and alcoholic adjustment. A slightly different questionnaire in terms of attitudinal changes (excluding those items related specifically to taking LSD) was used for the comparison group.

At the close of the interview, a date for the six-months follow-up

interview was made. The whole interview process was then repeated at that time (including the making of a 12-months appointment which was carried out with the same procedure).

The Study of the Subjects' Wives

In the course of the follow-up interviews, it became apparent that the LSD treatment of their husbands had provoked some very marked reactions in the wives of the alcoholics.

Hence, it was decided to study the wives' perceptions of the change in their husbands and how they had reacted to these changes. Six months after their husbands had left the Alcoholic Unit, those wives who were available and willing were interviewed at the research building or in their homes. Questionnaires were used, consisting of questions of a statistical nature; adjective check-lists on which they were asked to describe their own and their husbands' behavior before, shortly after, and six months after leaving the Unit; and a set of open-ended questions, in which they described the changes in themselves and their husbands resulting from the treatment. Fifteen wives of members of the LSD group and 11 wives of the comparison group men were interviewed in this way.

RESULTS

The Evaluation Instruments

Methods of evaluation of change in the subjects of both LSD groups and comparison groups were built into the procedures of the program.

1. *The attitudinal questionnaires* which were administered to LSD and comparison subjects on the first and last days of their participation in the program.

2. *The monologues* that were tape-recorded by the LSD subjects each Tuesday and Thursday of their four weeks in the program, and by the comparison group on the first and last days of their participation in the program.

3. *The Szondi tests* that were filled in by the LSD subjects each Tuesday and Thursday of their four weeks in the program, and by the comparison group on the first and last days of their participation in the program.

4. *The follow-up interviews* which took place three months, six months, and 12 months after participation in the program for both LSD and comparison groups.

5. *The subjects' wives' evaluation of the changes* in their husbands, studied six months after the men had left the program, for 15 of the LSD and 11 of the comparison group.

The tape-recorded monologues are presently being content-analyzed for changes in self and other images through the "General Inquirer" program developed at Harvard. The results of this analysis will be reported in a later paper as will the results of the analysis of the Szondi tests. The

study of the impact on the wives of their husbands' treatment at the Unit will be reported on fully elsewhere. In this paper we shall report in part on the wives' reactions, and on the results of the questionnaires given to the men, and on the follow-up interviews.

The Attitudinal Questionnaire

Thirty-three items were included in this questionnaire, and the alcoholics were asked to indicate their attitudes on a nine-point scale ranging from 0 ("do not have this feeling at all") to 9 ("do have this feeling very markedly") for each item. Such items were included as:

I feel confused about how to work out my problems.

I blame myself for most of my problems.

My family would be better off without me.

Attitudinal change for each individual on each item was estimated by measuring movement on the 0 to 9 scale. Total attitudinal change was measured by summing the changed scores of items.

The average total change for the LSD group was 80.0 points; the average total change for the comparison group was 65.3 points. The difference between these means is significant beyond the .05 level. Thus, the immediate attitudinal change in the LSD group at the end of the four weeks in the program was much greater than in the comparison group.

The average change on specific items is shown in Table 1.

Both groups had become less confused about how to work out their problems; the LSD group expressed this feeling more than the comparison group. The LSD group maintained about the same feeling with regard to the benefits to be accrued from the treatment experience, but the comparison group felt less that the experience would be of help to them in solving their problems.

The LSD group now liked to reflect about their problems more; felt that they had more self-understanding and self-respect; felt less guilty; attributed their problems less to the activities of other people; had more interest in religion; liked more to be with people; felt less irritable; felt less that they were ill. The comparison group changed little on some of these items and not at all on others.

It is somewhat surprising in terms of the attempt of the investigators to encourage A.A. participation in the LSD group that their questionnaire responses show a very slight decline of interest in A.A., while the comparison group shows a somewhat larger degree of interest than before treatment.

The Follow-up Interviews

As described, the alcoholics were re-interviewed at three months, six months, and at 12 months after discharge, by personal interview with the sociologist at the Institute, by mail, or by telephone interview with either the alcoholic or a relative. Where personal interviews were held, a questionnaire concerned with attitudinal change and adjustment in terms of

TABLE 1

Total Attitudinal Change (Decrease and Increase) On 33 Questionnaire Items In The LSD Group (n=26) and The Comparison Group (n=26) Measured On The First And Last Days Of The Four-Week Program

Attitude	Total Group Change Score LSD	Comparison
At this time I feel...		
1. Very guilty about what I have done in the past	-82	- 8
2. Confused about how to work out my problems	-70	-56
3. I know I am ill	-56	-17
4. I don't know what I really want out of life	-56	-17
5. My family would be better off without me	-55	-24
6. It is hard for me to relax	-50	-33
7. Other people have been the cause of most of my troubles	-48	- 3
8. Often it is impossible to be truthful about things	-45	-22
9. I have no self-respect	-36	+ 9
10. Many people are phonies	-28	+15
11. I become irritable very readily	-25	+10
12. My family do not approve of my association with AA	-24	+11
13. My friends tend to keep me in my bad habits	-23	-10
14. I have trouble understanding other people	-17	-15
15. I doubt whether life has any purpose	-16	-15
16. This group of people do not have much in common	-14	+ 2
17. It is often hard for me to get along with my employers	-12	+ 6
18. A man is judged in large part by his appearance	-11	-18
19. One of my problems has been a lack of sense of responsibility	-10	+15
20. A number of my friends are wealthy and influential	- 9	-15
21. I consider AA very important in maintaining sobriety	- 5	+18
22. This experience will be of help to me in solving my problems	- 2	-38
23. I blame myself for most of my problems	+ 6	-22
24. Making a lot of money is important to me	+ 9	-20
25. I have a desire to better myself	+12	+9
26. I enjoy being with this group	+16	+ 2
27. I like to be out among people	+20	0
28. I am very ambitious	+20	+16
29. I would like to help others solve their problems	+22	+18
30. Religion has little meaning for me	+25	-35
31. I like to reflect about why I do the things I do	+39	-26
32. I understand myself very well	+48	-16
33. I have no desire for alcohol	+58	+34
Total Change (both decrease and increase)	969	575

family, work, social life, and sobriety was filled in. The telephone, and as far as possible, the mail interviews obtained the same information but in less detail.

We shall report here the sobriety status (in terms of drinking pattern throughout this period) of the subjects at the three, six and 12 months interviews and also the improvement in their family relations and work adjustment during these time periods. In general one might assume a close relation between sobriety status and these two types of adjustment; however, it is possible that this might vary in the two groups. Additionally, the amount of contact with A.A. is reported. As an effort was made in the LSD group to encourage A.A. participation, it was hoped that the effect of this encouragement would show.

Sobriety Status

Table 2 shows the sobriety status of the LSD and comparison groups as of the three, six and twelve month follow-up interviews.

A majority of the LSD group at three months had remained abstinent or showed *Not Severe* problems (60.7 percent), though some (35.7 percent) had already developed *Very Severe* problems. At six months there was a sharp drop-off (from 60.7 percent to 28.6 percent) of those with *Not Severe* problems, a marked increase in *Moderately Severe* problems (from 3.6 percent to 35.7 percent), and a slight drop in *Very Severe* problems (from 35.7 percent to 25.0 percent). At twelve months the percentages were the same in all groups as at six months. None of the LSD group had been lost to follow-up, but three were dead.

By way of explanation, one of the men, after drinking for two months following discharge, was sober for one month and died of a heart attack; one died in a hospital of liver complications eight months after leaving the unit; the third, an amputee, after periodic bouts and persistent complaints of pain in phantom limb, committed suicide eight months after treatment.

The comparison group at three months showed less than half (44.1 percent) with *Not Severe* and the same (44.1 percent) with *Very Severe* problems. At six months the numbers in the *Not Severe* category had decreased (from 44.1 percent to 26.5 percent) and the *Moderately Severe* group was larger (from 2.9 percent to 17.6 percent), while the *Very Severe* group remained the same. At twelve months there were 20.6 percent in the *Not Severe,* 32.4 percent in the *Moderately Severe,* and 35.3 percent in the *Very Severe* categories. Six members of the comparison group were lost to follow-up, and two are now known to have died after slightly more than a year.

At three months the LSD group had some advantage over the comparison group in the *Not Severe* and *Very Severe* categories. At six months the advantage in the *Not Severe* category had disappeared, to be retained only in the *Moderately Severe* and *Very Severe* categories. At twelve months the LSD group had some advantage in the *Not Severe* and *Very Severe* categories.

TABLE 2

Three, Six, and Twelve Month Outcome In Terms Of Severity Of Alcoholic Problem During Period, Of LSD Group (n=28) And Comparison Group (n=34)

	LSD Group						Comparison Group					
	Number			Percent			Number			Percent		
Severity* of Problem	3 mo.	6 mo.	12 mo.	3 mo.	6 mo.	12 mo.	3 mo.	6 mo.	12 mo.	3 mo.	6 mo.	12 mo.
Not Severe	17	8	8	60.7	28.6	28.6	15	9	7	44.1	26.5	20.6
Moderately Severe	1	10	10	3.6	35.7	35.7	1	6	11	2.9	17.7	32.4
Very Severe	10	7	7	35.7	25.0	25.0	15	15	12	44.1	44.1	35.3
Dead	0	1	3	0.0	3.7	10.7	0	0	0	0.0	0.0	0.0
Lost	0	0	0	0.0	0.0	0.0	3	4	4	8.9	11.7	11.7
Total	28	28	28	100.0	100.0	100.0	34	34	34	100.0	100.0	100.0

* Not Severe—completely abstinent or generally abstinent with some drinking which did not cause problems.

Moderately Severe—generally abstinent but with one or more serious slips, long-lasting and/or requiring hospitalization; or part of the period problem-drinking, part sober. Very Severe—drinking throughout period, causing problems.

Thus, the LSD group, after an initial marked advantage over the comparison group, lost ground after the first three months. After this loss, however, they still managed to maintain an advantage over the comparison group at the twelve-month interval.

Improvement in Family Relations

Table 3 shows the numbers of cases in the LSD and comparison groups in which sustained improvement in family relations was reported at the end of the twelve month interval.

TABLE 3

Sustained Improvement in Family Relations Reported For the LSD (n=28) And Comparison (n=34) Groups At the Twelve Month Follow-up Interview

	LSD Group		Comparison Group	
Improvement in Family Relations	Number	Percent	Number	Percent
Sustained improvement	13	46.4	11	32.4
No improvement or no sustained improvement	10	35.7	17	50.0
Improvement not known	2	7.1	2	5.9
Subject lost or dead	3	10.7	4	11.8
Total	28	100.0	34	100.0

Evidently the LSD group sustained improvement in family relations during this time better than the comparison group; however, this difference is not statistically significant.

Work Adjustment

Table 4 shows the work pattern of the LSD and comparison groups throughout the twelve-month period.

The work pattern of the LSD group is better than that of the comparison group, though once again the difference between the groups is not statistically significant.

TABLE 4

Pattern Of Work Reported For the LSD (n=28) And Comparison (n=34) Groups During the Twelve Months After Treatment

	LSD Group		Comparison Group	
Work Pattern	Number	Percent	Number	Percent
Regular	15	53.6	12	35.3
Sporadic, brief and discontinued, or no work at all	9	26.5	18	52.9
Work pattern unknown	1	3.6	0	0.0
Subject lost or dead	3	10.7	4	11.8
Total	28	100.4	34	100.0

A.A. Participation

Since the LSD group was strongly advised to go to A.A. following their discharge, one might expect higher participation in this group during the year. Table 5 shows the amount of participation in both groups.

TABLE 5

Pattern of AA Participation For the LSD (n=28) And Comparison (n=34) Groups During the Twelve Months After Treatment

	LSD Group		Comparison Group	
Pattern of AA Participation	Number	Percent	Number	Percent
Regular	8	28. 6	7	20. 6
Sporadic or brief and discontinued	9	32. 1	8	23. 5
None	5	17. 9	12	35. 3
Pattern unknown	3	10. 7	3	8. 8
Subject lost or dead	3	10. 7	4	11. 8
Total	28	100. 0	34	100. 0

In general, the degree of regular and sporadic participation in the LSD and comparison groups is similar but fewer of the LSD group did not attend A.A. at all. This suggests that our deliberate attempt to get the LSD group to go to A.A. may have been successful in that apparently we got them to try it, though not necessarily to remain in it.

The Subjects' Wives' Ratings of Change in Their Husbands

In another way it was possible to evaluate the changes which took place as a result of therapy. Fifteen wives of the LSD group subjects and 11 wives of the comparison group subjects had been interviewed six months after the discharge of their husbands. In one part of this interview the wives were asked to check on an adjective check-list those adjectives which described their husbands before treatment; shortly after their husbands left the hospital; and six months after their husbands left the hospital. Table 6, which shows the numbers of adjectives on which various percentages of the two groups had changed at the two time periods, nicely illustrates the pattern of change which the wives described in other parts of the interview.

The initial change in the LSD group was great, but after six months it had dropped markedly. The comparison group changed much less than the LSD group initially and after six months had dropped close to the previous level. The LSD group, on the other hand, having dropped markedly after six months, still was higher than the initial change in the comparison group.

In the paper that describes fully the study of the perceptions of the wives of the alcoholics and their reactions to the change in their husbands, it is further noted that the greatest changes noted by the women

TABLE 6

Change in Husbands in LSD Group (n=15) and Comparison Group (n=11) Shortly After Treatment, and Six Months Later, Shown by Numbers of Adjectives Selected By Wives on Which Percent-Frequency of Subjects Showing Characteristics in Each Group Has Changed

Number of Adjectives On Which Groups Changed

Percentage of Group Showing Change	LSD Group		Comparison Group	
	Shortly after	Six months later	Shortly after	Six months later
Over 60%	11	0	0	0
40% to 59%	29	9	7	1
20% to 39%	17	26	28	14
0% to 19%	9	31	31	51
Total	66	66	66	66

were in the ability of their husbands to communicate with those in their environment and to tolerate them; and in the men's performance as bread-winners.

SUMMARY

We succeeded in inducing a much greater change of attitude in our patients treated with LSD 25 than in the comparison group who were not so treated and who had only the regular program of the Alcoholic Unit. This was also reflected in the way in which the wives of the LSD 25 group perceived their husbands. In the short run, at the three month stage, the sobriety of the LSD 25 group was much better than that of the comparison group. Yet, in the long run, this marked advantage was lost. The six and 12 month outcomes, while favoring the LSD 25 group, were not impressively different. The family and work adjustment of the LSD 25 group throughout the year of follow-up was much better than that of the comparison group, though this difference was not statistically significant.

The wives' perceptions of change in their husbands also showed a drop-off after six months, after a marked initial advantage for the LSD 25 group. In spite of this drop, the level maintained at six to 12 months was still as great as the initial gain of the comparison group, who after six to 12 months, were little different from the way they were before treatment.

It seems then that we require a more sustained social reinforcement of the new social roles that our subjects had begun to create. We tried to use A.A. in this manner, but our figures show that while we succeeded in getting more of our LSD 25 group to A.A., no more remained in it. It is interesting and encouraging that the LSD 25 group themselves tried with some success to develop their own group-reinforcing mechanism by arranging special group meetings after discharge.

What we did note and possibly could not recognize until we had seen

it occur was that this sort of group interdependence would have its own kind of disadvantage. While the group reacted strongly and favorably to the success of its members, their failures, too, reverberated strongly and harmfully. If one man began drinking, instead of supporting others, he might drag them down too. One patient, for instance, lived at another's home after leaving the Unit; when he took a drink, his host joined him and both were in trouble. This does not mean that group interdependence must be avoided, but suggests that it requires special structuring to insure that it is as effective in the follow-up as in the treatment phase.

Our study of the wives, whom we did not include at the beginning, shows that our results might have been better had we done so. The wives of our LSD 25 group members reported much more benefit than the wives of those in the comparison group, but they also reported many more problems. This strongly suggests a gratifying change in their relationships and the possibility for a new beginning, which we could not use fully to our patients' fullest advantage. These "LSD wives" were much keener to obtain information about their husbands' illness, to learn about the treatment and what it hoped to achieve, and to inquire how they might sustain and encourage the changes for the better which they undoubtedly had noticed. However, a change in the husband, even when it is for the better, if not accompanied by an appropriate and reciprocal change in the spouse, can easily be extinguished and the benefits lost in a welter of misunderstanding and resentment.

There was one major factor which could not have been predicted or avoided, and which may account for the fact that our LSD 25 group was losing momentum at the six month follow-up. From mid-June 1963 until the end of that year, a sustained, dramatic, and increasingly embittered controversy developed around the therapeutic substance LSD 25. While many journalists were remarkably circumspect and judicious, the opinions of the embattled professionals were often expressed immoderately. Our patients became increasingly aware of a variety of possible ill effects, though in fact these would be very remote under good conditions. The patients had to be reassured that they would not, as in the dramatic title of one article, be split in two and become incapable of being reassembled. The frequent association of LSD 25 with the "black market" and illegal activities such as drug-pushing would have been disturbing for any group of patients; our conforming and rather moralistic alcoholics found this very puzzling.

This situation contrasted markedly with our earlier work in Canada where patients were imbued with a solid optimism, public opinion was favorably disposed to the venture, and there was little publicity, favorable or otherwise.

In retrospect, it is questionable whether the two treatments one week apart have any especial value. It seems better to treat patients again when tests indicate that the effects of the initial session are wearing off so as to reinforce and extend them. There is nothing sacrosanct about a single treatment, and there is no reason apart from economy and convenience

for limiting oneself in this way. A number of our patients did, in fact, ask for repeated treatments for this very reason, and one at least ascribes his continuing sobriety to vivid dreams in which he relived his LSD 25 experience, and was thus reminded of his resolve not to drink. The measures which we have discussed here, and the refinements deriving from them, should make it possible to determine when and how social and psychedelic reinforcement should be provided.

We have found that our structured group interaction works well with alcoholics, as we thought it would, and that it provides a valuable method of directing our patients' interest and attention towards pertinent matters using their individual characteristics in a positive manner.

Our exploration, then, has been valuable in a variety of ways. We have evidence that our patients' values and attitudes altered for the better, and that, in accordance with Parsons' complementarity of expectations, their wives changed too. Further studies will be required to discover how to maintain and extend these beneficial changes. Alcoholics, like most of us, are creatures of habit. Their lives have become focused on and dominated by alcoholism. To achieve a new balance requires not only an undoing of earlier habits but the sustaining and nurturing of new ones. We hope to explore this in further studies.

DISCUSSION

Dr. Rinkel: I fully agree with Dr. Osmond's presentation. In one of our earliest experiments at Massachusetts Mental Health Center we found that our nurses who had received LSD in experimental sessions unanimously declared that now they have a better understanding of their patients with whom they deal, and it was suggested at that time that each doctor who wants to go into psychiatry should have at least one experience with LSD.

Dr. Servadio: Last year at the Psychotherapy Congress in London they advocated the introduction of the psychedelic experience in psychoanalytic training, much to the amazement and the indignation of some of my analytic colleagues. But I think that it should become a "must" sooner or later. What you said just now, I completely approve of.

Dr. Osmond: So far, our psychiatric colleagues have shown themselves very coy on this point. I have heard all kinds of reasons for not using psychedelics in this way, such as, "Our students might become too afraid," or, of course, "They might become addicted to LSD." But it seems to me that this is like surgery!—Anyone who is going to undertake it has got to get used to blood. And you have a simple choice—either you get used to blood or you give up surgery. When I started off as a medical student, I fainted at the sight of blood; however, I

wanted to go on with medicine, and eventually found I could put up with it.

Dr. Fremont-Smith: I think that I might make a comment here, and that is, Dr. Osmond, I think we must be careful not to be arrogant about the arrogance of our colleagues. Although I agree that most of us are arrogant, we're not arrogant because we believe that we understand all aspects of the life situation, but only that we think we understand a tiny aspect. Of course, the truth of it is that we don't understand even that tiny aspect very well, and I think that if we made our "must" a very permissive "must," it would be a more acceptable "must" than if we made it a "musty must."

Dr. Cohen: Could you give us a few examples of the perceptual changes that have been instigated, as a result of the LSD experience of your architect, in his hospital construction?

Dr. Osmond: Well, the first thing was that the importance of ambiguity in space became clear to him. We also discovered how little an architect usually learns about psychiatric patients. We assume that he knows exactly what we mean. Mr. Izumi, however, discovered from his own experience what I had been trying to tell him about patients living in an unstable world. We had, of course, discussed this frequently, but with LSD, he actually experienced it. For instance, he found that when you look down a long corridor, constancy of perception becomes disorganized. One of the best places to see this without taking LSD is at the TWA Building at Kennedy Airport. In one of the octopus-like legs of that contraption, we have inadvertently produced a machine for destroying constancy of perception. You cannot be sure whether the people walking toward you, along those sinuous corridors, are dwarfs close by or normal-sized people far away. And in such a corridor, when people walk toward you, instead of getting closer (our normal way of describing things), they merely seem to become larger, and if you don't realize what is happening, this can be quite frightening. The architect who has become sensitive to these matters quickly recognizes the need to avoid vague and strange spaces. And, in addition, he learns how to do this. There is a children's building in a well-known psychiatric hospital, in which along one side of a very, very long narrow corridor is a series of closed, shut doors, many of them locked. It is rather like the Bluebeard story. This building is for schizophrenic children. We know how normal children feel about locked doors. They are curious, inquisitive, and just a little afraid, otherwise there wouldn't be so much about them in fairy stories. These, remember, are disturbed, schizophrenic children. They are likely to be even more afraid. These arrangements were not essential to the building, and I am sure they could have been avoided if the architect had really understood what he was about. In other words, had the psychiatrists been able to communicate with him.

Dr. Fremont-Smith: What's "ambiguous space?"

Dr. Osmond: One example would be a space which makes you uncertain where you are in it, and where you want to go. Sheer size, for instance, can produce ambiguity. If you can imagine being in a dormitory in which there are 60 beds, all much the same, could you distinguish which is your particular bed? If you get into someone else's bed, there is liable to be trouble. Architects can, when they wish, design spaces in which nearly everything is extremely clear, so that you readily recognize the personal space which belongs to you and where your chair, your table, your bed, and your belongings are located. And again, in many buildings you see curious moldings and other decorations. When you look at them with LSD, you suddenly realize how very strange they are. In many mental hospitals there are literally thousands of square feet of nicely polished tiles on the walls, which act like distorting mirrors at a fun fair. These are illusion-producing machines *par excellence,* and very expensive ones at that. If your perception is a little unstable, you may see your dear old father peering out at you from the walls, and you may become extremely frightened, particularly if it happens you didn't get on too well with him. And even if you got on very well, it would be a little upsetting, if he has been dead a few years. Does that answer your question, sir?

Dr. Fremont-Smith: Well, are you saying, for instance, that most of us, when we build our own homes, build fairly stable environments for ourselves and really, it's only in these large set-ups, such as hospitals, that these problems arise? Or are you saying that this is something that ought to enter into all our basic architecture, because what you have described has seemed to be a kind of thing that could be avoided if you made a hospital or building more home-like, without the disintegrating architecture that you speak of.

Dr. Osmond: I am not sure that I know what home-like is. For in recent years, architects have been having a great kick with their open plan buildings. Many people find that these buildings deprive them of privacy. It appears that many people, like many animals, like to have a private space of their own where they can get away even from their beloved family. They like a space, too, where they can meet that beloved family in security, free from intrusion by the outside world. And they like other spaces where they can meet strangers.

Dr. Fremont-Smith: This is the living room and the bedroom?

Dr. Osmond: That's right. And the other thing is that most people like some kind of territory or space around them, in which they can walk about, feeling that it is theirs. Unless you provide these spaces in zoos, it seems that some animals have a habit of dying. Human beings are tougher. If they are well, they just feel uncomfortable; but psychotic humans seem to become worse. Most of us appear to be able to live under quite unpleasant conditions. But the more sensitive or the more psychotic we are, the less likely we are to be able to endure such conditions. Psychotic people are very sensitive until they are

totally beaten down into indifference. Therefore they require what we most would like when we are feeling tired, fatigued and irritable. Buildings which meet these requirements turn out to be excellent for many other purposes. This is the reason why architects are so interested in them, because the ideas which are absolutely essential for mental hospitals apply equally well to schools, dormitories, barracks, homes and all kinds of other buildings whose main purpose is to house human beings well.

Dr. Ling: Dr. Osmond, architects always are interested in buildings. Could you tell us, without disclosing professional confidence, to what extent was this man originally unstable?

Dr. Osmond: He is an M.I.T. trained architect; an exceptionally capable and stable man who worked his way up to his present professional eminence from poverty. I would say he is about as tough as they come. He undertook this work because he wanted to know more about the professional problems he was going to face in designing a building of this kind. He is a first class professional and, with his Japanese background, has a remarkable knowledge of space, color and their effects on human relationships.

Dr. Murphy: Could we hear some of the details of his LSD experience, how many times, dose, and so on?

Dr. Osmond: Well, he just took 100 mcg and he walked around in one of the nastier mental hospitals.

Dr. Murphy: You mean one experience?

Dr. Osmond: He had about three or four of them. He took the special opportunity to get around some rather unpleasant mental hospital wards. We were doing this for a specific purpose.

Dr. Murphy: He went to these buildings, the unpleasant mental hospitals, during the LSD experience, and he had three or four altogether, a hundred mcg.

Dr. Osmond: Yes, sir.

Dr. Blair: I'm not clear whether we really are advocating building new hospitals only when the architect has had LSD. And I'm not clear whether we are saying, as a meeting, that all psychiatrists must in the future have a course of LSD, or a few treatments of LSD or whatever you like—a few experiences with LSD—or they cannot be psychiatrists. It seems to me that that's what has been said by Dr. Osmond.

Dr. Fremont-Smith: The gentleman said it would be a very permissive "must."

Dr. Blair: I don't think that it would go down very well with a lot of people, and I would like to ask Dr. Osmond something. What is happening in these hospitals? He's talked about the hospitals, but I really haven't any clue to what they're like—whether they're like Picasso paintings, or what they are. I just don't know. What are they doing that's so amazing?

Dr. Osmond: Look, the difficulty here is this: the only way to grasp what a building is like, is to go and see it. I've tried to convey an idea of a

building in words, but it doesn't seem to work. Some architects can apparently visualize three-dimensional spaces from their plans. I know I can't do this and I don't suppose many of the rest of us can. The only way seems to be to go and see the building. Even films and photographs work so imperfectly as to be misleading.

Dr. Fremont-Smith: You mean it's like an LSD experience?

Dr. Osmond: Yes. Architects think three-dimensionally. We don't. We use one set of symbols and they use others. The architect can sometimes convey to his client what he has in mind, but he frequently fails. The special thing about the Yorkton Hospital was that it discarded ideas about mental hospitals which have been haunting us in psychiatry since the 1880's. Once we managed to discard those ideas, we were able to start again, using the principles which the Quakers developed at the Retreat at York in the 1790's. We brought them up to date and have developed from them certain new generalizations about people and the space which they need. The Yorkton Hospital is a particular example of our new ideas applied to a psychiatric building. Now, as to people taking LSD 25 for studying psychiatric architecture, I certainly don't suggest that architects are obliged to do this, and if I gave you that impression, it simply shows how tricky communication is. I do, however, think that psychologists and psychiatrists who claim to be interested in the psyche have an obligation to ask themselves this question: how is one going to become acquainted with the kinds of experience which people with very different outlooks apparently have? When we can answer this question, which seems to be quite difficult, we will have made a good deal of progress. Some people believe that LSD 25 and similar substances may be useful instruments when properly employed, and I have given you a few examples in our paper of how we actually have used such instruments for the public good.

The Metamorphosis of an LSD Psychotherapist

Kenneth E. Godfrey, M.D. *

Since the advent of research with LSD 25 by Hoffman and Stoll, much work has been done and an abundance of written material produced on the clinical and experimental use of the drug. This printed information has come from the pens of various and sundry professionals, from the healing arts, and from writers of sensational literature. Many of the articles in scientific periodicals or books have been an excellent source of knowledge about the drug. However, somewhat less can be said for a great many others. Some were based on questionable practices and caused one to doubt the scientific validity of the information.

To this aspiring LSD therapist, written material was the only ready source of information. I embarked on my study of LSD with alcoholic patients with some notions which at the present time I realize were naive although well intended. With this qualification in mind, I will attempt to retrace my experiences with the use of LSD in the treatment of alcoholic patients. At the same time I wish to raise some questions and point out some phenomena I observed during my experiences with the 120 patients in the study.

Topeka Veterans Administration Hospital has treated alcoholic patients since its inception in 1946. In 1950, Dr. Robert Wallerstein, Dr. John Chotlos and colleagues began systematic research with such patients (1). After two years of research and a two-year follow-up, they judged the treatment effectiveness of the various modalities tested in this order of priority: Antabuse, group hypnosis, milieu, and conditioned reflex. Because of these findings, Antabuse was adopted for all alcoholic patients (except where there were physical contraindications), even though they also participated in the hospital milieu. This treatment continued until July, 1963, when, with the intention of researching the effects of LSD on the life of the alcoholic, the method was changed to milieu therapy and the administration of one oral dose of LSD (300 to 400 mcg) to each patient during the sixth week of a twelve-week treatment program. The basic milieu program was the same, with the LSD experience replacing the alcohol-Antabuse reaction as one focal point and fulcrum of the 90 days.

* Assistant Chief, West Psychiatric Service, Topeka Veterans Administration Hospital, Topeka.

It was at this juncture of the treatment-research program that my intensive work with alcoholics began.

During the early phase of our work with LSD, the technique was as follows. The research and treatment plan called for 300 mcg of LSD to be given at noon to two alcoholic patients daily during the sixth week of the twelve-week program. Alcoholic patients are admitted from the top of the waiting list of applicants for the program in groups of from five to eleven. In the course of the first year there were eight alcoholic patient groups. These groups were tested and treated successively according to the time of their admission to the program.

In the first half of the second year of the LSD metamorphosis, Groups IX to XIII had entered the program. Psychological testing was administered and certain psychophysiological data were collected on an Offner Dynograph after the administration of the drug. Each man was in a room by himself or when needed with a technician. One-way vision glass made it possible to observe the patient from the laboratory room containing the electronic equipment. This phase of work was relatively new to the hospital, and there was much interest—a sort of a carnival air—in observing the reactions. The first group of six alcoholic patients took the drug under these circumstances, but none reacted psychedelic ally (Levels V and VI). Four reacted psychotomimetically (Levels III and IV), while two were able to resist the drug altogether except for some physiological signs (see Table 1).

After reading the available literature on LSD, it occurred to me that the ability to experience the LSD reaction may be related to one's ability to allow himself to become hypnotized. (3, 4) I thought it might be helpful to use hypnosis as a test for choosing those individuals most likely to respond to LSD 25. Group hypnosis was given twice weekly to the first twenty-four patients prior to and following the LSD experience. This was to determine the depth of trance each patient was capable of reaching rather than to prepare the patient for LSD. We simply explained to the patients that the LSD was a treatment modality used in this program. We found that the depth of hypnosis before LSD bore no relation to the depth of response to LSD. (5) However, we found that those with a better response to LSD subsequently reached a greater depth of hypnosis.

After the first group of six patients who showed such marked resistance to the LSD experience, we decided to repeat the LSD for this group in a less formal setting and this time without psychological tests or electro-physiological measures. This, we feel, was in the right direction. Nevertheless, there were a number of occurrences that we now know in retrospect were not conducive to the best treatment outcome or result. (6, 14) The setting for both patients during this second phase was then a large nursing lounge twenty by twenty feet in size. A number of paintings by hospital patients seemed to have a distracting effect on the patients and apparently interfered with their attaining the best level of insight. Some of these paintings were grotesque. The windows were draped, and the furniture consisted of sofas, overstuffed chairs, coffee tables, and tables with lamps.

This large room was separated by cloth dividers into two areas, one for each of the patients undergoing the LSD experience. One record player played for both patients. During the LSD experience, each patient of Groups II through VI spent one and one-half hours of the afternoon in the research laboratories undergoing psychological and psychophysiological tests. During the rest of the year the following personnel sat with the patients: the writer, the first-year psychiatric resident assigned to each patient, nursing aides and nurses. None had had a personal LSD experience. We had arranged to give a personal LSD experience to all treatment and research personnel who would be attending the alcoholic patients' LSD sessions. Before we were able to carry this out we were detained from doing so because of the flurry of ideas of caution expressed at the American Psychiatric Association meeting in Los Angeles, May, 1964.

The lack of privacy, distracting pictures and the large number of personnel were not conducive to optimal LSD experience and sharply interfered with the patients' ability to introspect. Even so, some patients began to have psychedelic experiences. This may have been because the treatment was stressed more than it had been before when research seemed to be the basis for the experience. We also began to use classical psychoanalytic interpretations, most of which fell on deaf ears. These psychedelic experiences were not in the sixth level. (7)

The patients were then given an opportunity to lie down and cover their faces with a towel if they should choose. We began to observe many reactions not seen before, although we had always been able to recognize the effect of LSD to some extent.

Realizing that the treatment circumstances were not yet optimal, we changed the situation again by providing an individual room for each patient and limiting personnel to one or two per patient. As before the patients still were taken to the laboratory for tests. With these changes some patients reached the sixth level but not for any extended time. One patient, just after being brought back to his individual room after testing, said, "That man treated me so well during the tests that I feel now that all that's past is past. I feel all clean, like the preacher says." He had been tested by a psychological trainee who had had much experience with people, was interested in the work going on, and was able to empathize with his patients. All in all, however, the level of LSD response continued to be less than that described in the later literature.

At this time, Dr. A. Hoffer of Saskatoon, Saskatchewan, visited the nearby University Medical Center to give lectures on LSD. From nay contacts with him there, I learned a great deal about the set, setting, and technique of administering LSD. Dr. Hoffer suggested that I visit Dr. Sanford Unger, who was at that time treating alcoholics with LSD at Spring Grove State Hospital near Baltimore, Maryland. He also suggested that I go to Princeton, New Jersey, to visit Dr. Humphrey Osmond, one of the pioneers in LSD work.

As a result of my visit to Spring Grove State Hospital, I learned more about their technique of conducting an LSD experience with indi-

vidual patients. (8) After speaking to a number of their alcoholic patients who had previously had the LSD experience, and after interviewing one man immediately after his LSD experience, I was struck by what seemed like a change in character. (9) It was evident that something was happening to these patients which we had not seen happen to ours. I was struck by the importance of including an alcoholic alumnus of their LSD program in the treatment team.

We learned to manipulate the circumstances in order to achieve a particular kind of LSD reaction, it was hypothesized that the psychedelic reaction made for a healthier, happier future life for the alcoholic. However, this hypothesis needed to be proved.

After three valuable days at Spring Grove, Dr. Unger and I drove to Princeton for a most refreshing and stimulating conversation with Dr. Osmond. We then began the dosage pattern Dr. Unger had set forth, but changed little else. Some of the patients experienced the highest level psychedelic reactions, but not as thoroughly as we had seen at Spring Grove. Thereafter, we began their experience at 10:00 A.M. with additional doses of LSD as we had seen done at Spring Grove. Our psychedelic (Levels V or VI) reactions now began to appear more often. We realized that since most cases needed the first additional 200 mcg of LSD after an hour, it might be best just to begin with 500 mcg. With this change additional doses were no longer needed. We also began preparing patients for the LSD treatment, employing some of the accoutrements used at Spring Grove.

Music chosen by each patient was introduced during the experience, and the patients were encouraged to "let the music take them where they needed to go." We changed the paintings to more classical ones, eliminating the grotesque and reducing the number of those of a religious nature. However, more than a few patients viewed a picture of Napoleon on a horse as looking up (to God).

Prior to receiving LSD on our program, each patient was encouraged to write his autobiography for a number of reasons. First, it gave the patient an opportunity to review his life in preparation for the LSD experience. Second, the observer therapist used the biographical material in order to know the patient better, and thereby increased his effectiveness with the patient during the LSD experience. Patients were encouraged to write their experiences after having LSD, to reinforce the experience, and to talk to each other as well as to members of the succeeding group for the same purpose. It was suggested that they use the remaining six weeks of the program to work out whatever problems came up during LSD.

During the second year of our work, we organized a new therapeutic team consisting of the writer and three nursing assistants. These nursing assistants had had considerable experience sitting with the patients during their LSD experiences during the previous year. All had studied the handbook of LSD therapy by Chwelos *et al.* (2) We had discussed the technique and philosophy of the LSD setting among ourselves. First-year psychiatric residents were no longer used as therapists but were used to conduct the one-day post-LSD interviews. We felt the change in the

treatment team had a number of advantages: 1. it gave the patient more stable support; 2. the experience previously gained by the new team was applied more consistently to all patients; 3. the valuable time of the residents was used more efficiently as their time expended was cut from eight or ten hours to one or two hours and they gained more knowledge through the post-LSD interview; 4. it allowed the treatment team to study the reaction on a more continuous basis.

Two hospital rooms on the alcoholism ward were furnished in a homelike setting. These rooms were located at the quiet end of a corridor traversed only by the treatment team during the LSD experience. In each patient's room, there was always one nursing assistant chosen from among the three. All members of the team were inculcated with the philosophy of complete support for the patient at all times. One of three nursing assistants acted as coordinator and relief man for those sitting with the patients during the noon hour only. The writer went from one patient to another giving support to the nursing assistants as well as to the patients, suggesting and helping the patients to attain the psychedelic experience through such support and encouragement. The music chosen by the patient was played, and a red carnation was always present.

At 9:00 o'clock on the morning chosen for the LSD experience, the two buddy-patients (each patient chooses or is assigned one or two patient-buddies who usually take LSD on the same day) and all therapeutic personnel gathered in the nursing station. The two patients were to be given 500 mcg of LSD each. At this time, we impressed upon the patients the fact that this reaction was for their treatment alone. We stated that we would not push or test them in any way, but that we would fully support them throughout the experience. We warned there might be times when they might feel that we were reading their minds, and assured them that this could not be done. Each was encouraged to go back to his room, lie down on his bed, put a towel over his eyes, relax completely, listen to the music, and let the music take him where he needed to go.

With these changes, almost 100 percent of the patients began to reach a high level of psychedelic experience within one and one-half to three hours. We witnessed a great number of regressions back to childhood, even to the birth experience. One man stated he felt as if at one time he were a single cell. Another relived the life with his brother with whom he had fought as a boy. The patient had won the last fight, the brother had gone off to war and had not returned, and he discovered much of his depression was caused by his not having told his brother he was sorry. After reliving this, he felt as if he had been washed clean and was better able to meet life thereafter. One patient said, "It was all over when Christ took me by the hand." Experiences of ecstasy became somewhat commonplace.

We treated some alcoholic patients classified as schizophrenics and had no trouble during the experience itself. We saw great changes in these people, but these changes lasted only two or three weeks. Nonetheless, there were three patients, previously diagnosed as schizophrenic

but now in remission, who continued with this "change in character" throughout the program. These men are continuing to be abstinent. Patients classified as schizophrenic who again regressed within two or three weeks generally left the program prematurely and continued to drink as vigorously, if not more so, than they had before.

Since some patients even when given psychological tests had attained psychedelic levels, we planned to see if the psychedelic level could regularly be reached even with testing. We felt that we could offset that effect by giving sufficient support during testing to allow the patients to enter the psychedelic levels of response.

One group of five patients was tested while under LSD. Each was accompanied by a selected nursing assistant throughout the test experience. Only one patient had a psychedelic experience, and he did so, "because I found it too painful to come back into consciousness to answer the questions. I just gave up and paid no attention to the questioners." The other four patients had psychotomimetic reactions, mostly at the paranoid level, and were most vociferous in telling us so after the tests were over. Because of our understanding the basis for the disruptive impact of psychological testing, we gave them another opportunity to have LSD, but in the informal, completely supportive environment. We will not test patients any more while they are undergoing an LSD experience.

Four patients took 500 mcg of LSD in the informal setting, and all had psychedelic experiences. One of these was the only alcoholic of Hebrew faith treated with LSD at this hospital. He regressed back to his home city when he was a child, and "received very much from the experience, especially the music." However, after five days he began using rationalization and, at that time and subsequently, denied a psychedelic experience. This man had come to the end of his tolerance physically, in that he was having ascites from a cirrhotic liver. We held very little hope for him prognostically. However, since that time he has remained sober and is working with Alcoholics Anonymous in a nearby metropolitan area.

The other three members of the group had complete psychedelic ecstatic experiences. They reviewed their lives and saw the answer. They believed they saw God. They felt their own innate strength and regained or gained pride in themselves as men and as a man among men in the human race.

A week or ten days after the second LSD experience, these patients were questioned by a group of researchers. They were asked to contrast the two experiences. Three explained that the first experience had made them angry. They felt as if they had been cheated, but the second experience was completely fulfilling. The member of the group who failed to reach the full LSD experience stated, "LSD is greatly overrated. It is a gigantic nothing."

We feel now that we have evolved a suitable method for giving LSD to alcoholic patients. We will refine our method as we progress.

The writer is now embarking on research with neurotic patients using intensive psychotherapy and LSD in repeated doses. (10, 11, 12, 14) Each patient will be given an extensive gallery of facts and evaluative

interview before the therapy begins. He will have three one-half periods of psychotherapy each week, and LSD and Ritalin (Sandison; Ling; Buckman) every two weeks. The psychotherapy will be closely evaluated by interested psychoanalysts from the Menninger Foundation.

After 120 patient LSD sessions, a certain pattern becomes evident. Some patients react to LSD, not necessarily step by step, and progress in an orderly fashion to the different levels of reaction as defined by Chwelos *et al.,* but may "vault" over the resistances and psychotomimetic experiences to arrive at the psychedelic very rapidly. Many other aspects of LSD treatment have become apparent, and I feel that there is need for much study of the phenomena I will now discuss.

The first of these is the physical setting. The value of the homelike setting has been strongly supported by our experiences in conducting LSD sessions. While the psychological tests were conducted during the LSD reaction, there were really no ecstatic experiences. Many stayed in Levels I to IV. Almost all patients receiving LSD in the supportive homelike setting reached the psychedelic phase and the majority of these reached the ecstatic level. Testing of any kind during the experience tended to reduce the reaction, and caused patients to become angry and to reach only the paranoid level or less. However, with quiet support, positive encouragement, music, the flower, pictures, etc., nearly 100 percent reached the desired level. With prior orientation to the experience, the homelike setting, the full supportive measures assured by the team, and positive suggestions to the patient on his ability to reach the goals of LSD therapy as well as of life, the patients felt free to introspect, regress and use their innate ego strength to reintegrate.

Resistances: (13, 14) Patients in our alcoholism programs have been able rather effectively to resist the introspective experience even on doses up to 900 mcg of LSD, but only in the formal testing setting. Examples of the resistances of denial and running away were seen in most patients at the beginning of our program. One man with 400 mcg of LSD denied any effect of the drug. In fact he denied staggering, although he had utilized the whole width of the hall while returning to the ward. These patients identify any procedure in the psychophysiological laboratory as a test which they must resist or overcome. Another patient behaved as if he were on another "glorious bender."

Some patients used somatization as a resistance which persisted during as well as after discharge from the program. An "alcoholic" patient using alcohol as an analgesic to ease his symptoms is extremely difficult to wean away from alcohol. "It is the only thing which will keep my arthritis from hurting." It may be that this type of patient should have more than one, or numerous periodic experiences with LSD coupled with more formal psychotherapy as is practiced by Ling and Buckman. (11) Some believe somatization is indicative of the borderline of ego discontrol, almost the last line of resistance before a psychotic reaction, usually schizophrenia. I speculated that if we found that this type of patient could be helped with the two combined modalities (LSD and psychotherapy),

success would be demonstrable more quickly than with persons with only the symptoms of alcoholism.

Intellectualization is another difficult resistance to overcome. Even if the patient has a psychedelic experience and is initially conversant with the richness of the experience, he tends to rationalize, externalize and isolate the experience until it no longer has subjective meaning. One patient communicated his experience as most delightful and very worth while during the experience and for three days thereafter. However, he soon explained his regression to be due to a movie he had seen a few days before the LSD experience. Even in the face of his intellectualization it is interesting to note he has been discharged from the hospital, is abstinent, and is working toward productive employment.

Those patents who intellectualize by demanding to know how their ongoing, subjective reactions relate to their life adjustment fail to reach the highest psychedelic level. Coming at this time, this demand to relate to or connect is premature and blocks further introspection and reintegration if allowed to persist. We point out this resistance and encourage the patient to wait for logical re-integration. We also suggest that he may be able to work out unanswered questions with his individual doctor and in group therapy during the remainder of the program.

Simulation of a good reaction is another resistance, which although permitting the patient to overcome the LSD reaction, usually results in an angry, paranoid and empty feeling after the completion of the reaction. This type of patient usually asks for another dose of LSD. Under the present treatment procedure we cannot give more than one dose, except for exceptional cases. For these simulators it is reasonable to administer LSD along with short-term psychotherapy on an out-patient basis.

Resistances to the LSD reaction seem to be related to resentment of authority. Vomiting may be a resistance to the drug, an "escape mechanism," or the expression of hostility to the person conducting the experience. A majority of those who vomit manage to soil everything and everyone around them. We found vomiting in a small number of our patients. It appeared to be "another bender" by the patient, as though he were saying, "Nothing you can do will make me do what you want me to do," i.e., quit drinking. At the same time he caused inconvenience to the treatment personnel by forcing them to clean up the mess. Vomiting may also be a testing of the motives and commitment of the treatment personnel, to find out if they "really care." At the same time, one perceives the element of regression to the infantile dependent stage of development.

Excessive drinking of water has been used by some patients to simulate a drinking bout. For others, it appears to be symbolic of the intake of love and care. One patient stated plaintively, after drinking the last of a series of glasses of water, "All I ever wanted was just a glass of water." He may have been attempting to show his acceptance of the drug experience —as if he were taking another dose of LSD in each glass.

Excessive smoking as well as much talking are methods of escape and

a means to hold on to something real in the environment. We point this out to the patient and encourage him to desist in order to promote the introspective experience.

Symbols, symbolic language and symbolic interpretation: Savage *et al,* in their *Caveat—The Psychedelic Experience* point out that, "Training in conventional therapy methods is not necessarily an asset and may be a liability. An omnipotent therapist steeped in interpretive psychotherapy may confuse or otherwise harm the patient with resistance interpretations at a time when emotional support is indicated."

Our experiences support this view. However, Savage's straightforward declaration was warmly welcomed. Emotional support is essential when one is working with patients who are in the midst of an LSD reaction. To be able best to give such emotional support we should be able to feel supportive and be able to communicate that support to the patient as clearly as possible. At times one feels as if he might transmit such thoughts by mental telepathy, as I will attempt to illustrate in a moment. The objects with which we furnish the patient's room during the experience—the flower, the mirror, the drapes over the windows, pictures, paintings, music, food, drink, etc.—appear to have symbolic meaning and favor a supportive atmosphere.

One of the patients I observed labored over his lunch tray as a chess player studies the chessmen in competitive play. The lunch tray was on a coffee table directly in front of the couch on which he sat. He divided the tray in half by placing himself, the glass of milk and the red carnation on a line bisecting the tray. He then studiously placed the other articles on the tray either to the right or left of the imaginary line. He debated within himself where to place each item. After removing his watch from his left wrist, he placed it to the left of the midline, but was not satisfied with it there. Finally, after wavering in his choice, he placed it to the far right on the tray. All this time, I only sat and observed. With a most quizzical expression, he took his eyes off the tray, looked straight at me and said, "I have come up to the point [of knowing], but can't seem to get it." I then pointed to the flower, the milk and the patient, in that order, and as I did so, spoke three words, one for each object, "Love, life, you." Whereupon the patient's facial expression turned to relief and joy. He then reached for the milk saying, "Now I can drink the milk." He drained the glass with great satisfaction and was at the time in the highest psychedelic phase. He has since finished the program, worked steadily, and is now endeavoring to set up regular group meetings with all of the alumni of our program in Kansas City, Missouri.

I agree that analytically oriented resistance interpretations tend to distract and make the LSD patients angry, but I feel that we can make symbolic interpretations which reach them not only on a conscious but unconscious level as well. Such symbolic interpretations seem to go straight to the mark without being filtered out by the "examining grids of the ego's defenses. Apparently these special communications are able to carry more than logic, persuasion or suggestion and much more than jargon interpretation. Each of these modes of communication is useful but

none seem to transmit meaning as well as symbolic language. We should find ways to discover the meanings of various symbols so as to make use of them with more confidence and effect.

Our patients also see the petals of the flower moving in and out. Most see this as a beckoning. They may "become a part of the flower" and identify with love. Some say a "bad thought" makes the flower wilt and drop its head, but with a good, kind and loving thought it again becomes straight and beautiful. Here is one interesting sidelight with regard to the red flower. One of the patient-buddies had reached the psychedelic level while the other was still struggling in the paranoid phase. We brought the first one into the second patient's room to see if he might help his buddy past his paranoia. He asked his buddy to look at the flower and they soon discovered the petals folding and unfolding synchronously. The second patient was able to reach the psychedelic level, but was one of those schizoid individuals who left the program prematurely and began drinking as vigorously as before.

So many patients under LSD gaze at the flower for minutes, then sit back with a smile, look at the writer, and nod, yes, then say, "That is it." On asking what "that" means they give such answers as "That is life. I am a part of the flower and it is a part of me." I understand these statements as the patient's feeling of "being at one with God and man" and becoming a part of humanity from which their illness had caused estrangement, and I reply, "You are welcome." They seem to get the point suddenly. "I feel as if I am back with humanity, able to see and accept other people as they are, and feel myself strong enough to carry on in a better way through life."

As much can be said about the two-sided hand mirror. Ordinarily, when the patient has reached the realization of a dual reality, he is offered the hand mirror with the question, "Have you looked at the mirror?" He usually takes the mirror, quickly looks at one side, and with a grimace he starts to lay it aside. We say, "You know, there is another side." He turns the mirror and gazes into it, maybe turning his head from side to side. He then begins looking at the top of this side as though there were something to see above the mirror. His facial expression mellows and he may set the mirror back down carefully or may then persist in looking at both sides with equanimity. We can speculate what the two-sided mirror means symbolically. Some patients explain that at first they see themselves at their worst, but what they could be is on the second side. Some see themselves as a wrinkled old man, much beyond their chronological age. The consensus is that the two-sided mirror causes the alcoholic patient to pause long enough to believe there is a good, worthwhile side to himself rather than being all bad—the position of depression one often encounters in such a patient on "the bottom." Further study is needed to clarify this and the other aforementioned points. I feel that in the new language needed for LSD therapy we will find that symbolic language will be increasingly relied upon. I intend to study this in a more intensive manner and would welcome information from any other interested LSD therapist.

At this point in my experience with LSD, I believe I can make these

factual statements. That alcoholic patients change during and subsequent to the LSD experience seems clear. Admittedly I may be prejudiced because of my wish to help patients. However, these patients change in their appearance, action and interpersonal relationships. These changes are attested to by other individuals. Indeed, even those of the first three groups not reaching the psychedelic level changed enough to cause one psychologist to note that, even though he had been prejudiced against LSD, he observed seemingly favorable changes in the patients following LSD.

Patients reaching psychedelic levels note changes within themselves. For example, one stated, "Before LSD I could not feel for anyone else. If one of the fellows should mention his problem, I listened but would think 'So what!' Now I can really be interested, I can love. I can love my children. Before I really couldn't love anyone. I didn't know I had so much anger inside me. But now it is gone. I feel so good in here," he said, while pointing to his chest.

Numerous patients exclaim, "I have never before known such peace. I may try to become angry, but I can't." Many proclaim their ecstasy for all to see.

Initially the treatment personnel of our alcoholism unit were reluctant to work with alcoholic patients. They now have great interest in the program. Their interest may be attributed to a number of factors, but the changes in the patient after LSD have contributed much to create and stimulate that interest.

Nurses and nursing assistants note that patients are more open in ward meetings and classes after having had LSD therapy. They are also better able to mix socially with the ward personnel and their fellow patients during informal periods of the day. Those patients who previously demanded more staff time subsequently demand less; those who were withdrawn now are more outgoing; those cynical, depressed, passive-aggressive, belligerent, dependent characters become more normal and even appear more sure of themselves, more at peace.

Wives and relative note and have talked to us about changes they noticed while visiting or after the patient returns home. One wife who was especially pleased with the changes in her husband gratefully wrote, "He acts like a different man. He and the children now enjoy each other. We are closer. He is interested in his work and can socialize with others better than he ever could before."

A father and stepmother with whom the patient had had great conflict before the program, now proudly exclaim he is altogether different from before. Prior to LSD he reacted to interpersonal relationships with withdrawal, angry outbursts and drinking. Now he voluntarily enters into close relations with those at home as well as with groups at church. Before, he was especially resistant to church functions. His dress is appropriate and he is more outgoing.

We realize that most alcoholics will have "good periods," and that the family is the first to believe he has really changed, only later to be hurt, chagrined and punitive. Time and follow-up studies will reveal whether or not these positive changes persist. Nevertheless, prior studies

have shown such changes to last up to five years past treatment. A. Hoffer, Director, Psychiatric Research, Saskatoon, Saskatchewan, in his paper, "Treatment of Alcoholism," says, "Over 500 alcoholics have been treated since 1953. Several follow-up studies show that about one-third of the groups are sober, one-fourth are much improved. The remainder are not benefited. University Hospital has been running about 60 percent sober and much improved." Furthermore, evidence of these changes illustrates the workings of intrapsychic change. Follow-up studies are needed to determine whether or not these changes will endure.

We were unfortunate the first year of the program because an adequate follow-up program was not provided for. A research social worker is now doing this follow-up work.

Since our patients come to us principally from a three-state area (Kansas, Missouri and Oklahoma) follow-up entails much travel by the research social worker. However, many patients, especially those who have had LSD subsequent to June, 1964, routinely return to visit the ward and personnel. Their accounts of effective work, happy sobriety, improved intrafamily interpersonal relationships as well as their enthusiastic support for the program, already comprise some follow-up data. These personal accounts are gratifying to the treatment personnel as well as to the patients presently in the program.

These behavioral changes raise questions regarding the possibility of or nature of the intrapsychic change. Character changes generally employ identification with significant persons. Individuals with emotional conflicts are in a certain sense immature. Emotionally ill persons seem to be in conflict with their introjects. It is postulated that the self-destructive acts of an alcoholic are directed toward the introject within himself. The psychedelic experience by means of the observing part of the ego allows observation of introjects and permits the patient to discard, neutralize or assimilate them. The introject in relation to which the patient was in conflict is identified with. Re-integration of life's significant episodes then occurs under the aegis of the different or newly identified ego or character.

According to our observations we feel that in the psychedelic experience identification is either "masculine" or "feminine" in character. The masculine identification, appreciative of humanity and God (as a possible symbol of the father), is characterized as strong, capable, worthwhile. Such an individual can take responsibility for himself and others. He can give and receive love. He discovers his innate strengths and is able to use them realistically.

The second type of identification tends to be submissive. At this time we do not have sufficient evidence to state which type of identification gives the better prognosis, but we believe we see a trend toward the former among our male alcoholics.

These hypotheses may be the basis for new directions in LSD research. The design for such research must be as scientifically precise as possible, but at the same time clinically tenable. We are aware of attacks on LSD research because of prejudice and ignorance. Therefore, even in the face of these encouraging results, restraint should be used.

I feel that the experience I have described in this paper could have

been better understood by all in our program had I been able to visit one of the pioneers in this work before I began to use LSD. Although experience is said to be the best teacher, I believe that one should learn the techniques and pitfalls by working first with one more experienced in the field. Therefore, I propose that this group offer its help to those people who contemplate beginning an LSD treatment program. I believe that LSD therapy is a most worthwhile treatment method and should command the intelligent interest and study of all men in the healing arts, especially of psychiatrists.

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TABLE 1

Objective Check List for LSD Experience

Resistance Levels (I, II)

Psychotomimetic Levels (III, IV)

Psychedelic Levels (V, VI)

	The patient:
Level I	1. appears tense
	2. seems irritable
	3. denies mental changes
	4. focuses attention on external objects or trivial matters
Level II	5. the subject reports dizziness, tingling, nausea, headache, tightness, palpitations, chills, hot and cold
Level III	6. seems fearful
	7. seems confused or delirious
	8. changes in body image
	9. appears to experience distortions of perceptions, hallucination
	10. seems to experience crowding of thoughts
	11. appears to be unable to concentrate
	12. emotional lability
	13. speech disorganized, incoherent, irrational
	14. fears losing hold on reality or going insane or losing control

	15. ideas of reference or suspiciousness
	16. flight of ideas
	17. grandiosity
	18. arrogance or contemptuousness
Level	19. complains of helplessness
IV	20. complains about hallucinations
	21. complains about time distortions
	22. complains about demands or questions
	23. has angry outbursts
	24. complains about being bothered
	25. self critical
	26. distracting thoughts
	27. depressed, sad, crying
	28. acts silly
	29. acts as though others are silly
Level	30. talks about personal matters or childhood with encouragement of
V	examiner
	31. blocking of thoughts on answering examiner
	32. prefers to be alone
	33. tends to be taciturn
	34. spontaneously talks about personal matters
	35. spontaneously talks about childhood
	36. wants therapist nearby
	37. seems happy, euphoric or ecstatic
	38. feels he is seeing things more clearly
	39. seems relaxed
Level	40. seems self confident
VI	41. convinced he has hold on important insights
	42. seems fraternal, cordial or grateful to the experimenters
	43. sees new beauty in things around him
	44. feels new sense of intellectual power

DISCUSSION

Dr. Fremont-Smith: Thank you very much, Dr. Godfrey. I would like to comment on two points. One is your first statement which I think is very profound and carries weight right across the board, not just with LSD, and that is "when we quit changing, we might as well quit altogether." This doesn't apply just to LSD, but to the whole process of human growth and development, and also to being a physician and a therapist. The other is the important scientific evidence you brought to the support of what I had mentioned earlier, that is, in terms of what response you get from the stimulus, the state of the organism is as important as the nature of the stimulus. Your stimulus was LSD! The state of the organism was modified by the setting. I think it was a beautiful example and we are grateful to you.

Dr. Levine: Apropos of Dr. Godfrey's comments now and your comments at the very beginning of the Conference, that we all came here to learn as well as to tell, I'd like to mention a few things, specifically, that I have learned from this Conference. Unfortunately, or fortunately, neither has to do with LSD. The first thing that I learned is that the criteria by which I accept new information as being valid are different than the criteria which you use on which to accept new information as being valid. This is an important point.

Dr. Fremont-Smith: This is one of the basic problems in the intricacy of communication. That is, each group has its own criteria for validity, its own milligrams, milli-seconds, milli-equivalents—they are usually millis of one kind or another—and unless the problem is presented in the form to which the group is accustomed, it is likely to throw it out. Now this doesn't mean that doubting other forms of data is bad; it may be that data aren't necessarily bad because they come in a different frame of reference.

Dr. Levine: The second thing I learned, and it is related, is the fact that the criteria which I accept as being valid for me to accept new information are not acceptable to a large majority of the people here. So that I could not convince you by producing evidence which convinces me! This seems to be especially true in the broad general area of methodology. Here I would only like to comment that in going back over the papers of the meeting you will find that I know where I have recommended double-blind controlled studies across the board. I am afraid that the double-blind controlled studies have here been set up as a straw man and attacked many times. Double-blind controlled studies or the double-blind controlled technique is extremely appropriate in particular experiments, when certain questions are asked and certain procedures pursued. They can be useful. I have not used double-blind controlled techniques in my work with LSD, because I have not felt it was appropriate to the questions I was asking. In terms of methodology my only point is that we think of what we are doing and try to apply the appropriate controls, whatever they might be, to the questions we are asking and to the context in which we are working. The double-blind controlled experiment has its place. It may not be in the sort of questions that we have posed.

Dr. Fremont-Smith: Dr. Levine, my friend Dr. Conrad Lorenz has a phrase I would like to quote. He said, "I couldn't disagree with you less, and I think the way you stated this is excellent. I would like to say one more word, because I think this is part of the important discussion and one reason why people in different circumstances and different backgrounds have different criteria which are mutually unacceptable with respect to validity. It is because they have different basic assumptions. If we could and if we had time in this Conference to explore and examine the basic assumptions underlying our criteria of validity, we would find that in all of our criteria of validity, there are weaknesses in the basic assumptions, sufficient weaknesses to make

us fairly tolerant in examining other people's criteria. We would also remember that serendipity operates, and that the most important discoveries in many areas have come about quite accidentally when we were trying to prove something else. This is another reason for keeping our minds open and alert.

Dr. Levine: What you said is approximately what I was going to say. I'll try to turn it around now. I was probably the only one to have mentioned the word serendipity, interestingly enough, in my previous statement, because I consider the hypnodelic technique largely a serendipitous one in terms of the occupations that have been reported and the way we developed the technique. In conclusion, I'd like to thank the South Oaks Foundation for sponsoring this Conference and for inviting me. If there is another LSD Conference, and if I am invited, I would hope that criteria by which we accept new information as being valid be more consistent and with fewer differences. If we utilize the open-mindedness that has been recommended, the next time we get together the criteria will not be as far apart as they have been up to this point.

Dr. Ling: One of the most interesting observations Dr. Godfrey made is in reference to the chaos that ensued after the disruptive scene with the nurses. We haven't used "love" very much in this Conference. As far as I know, love cannot be measured. Therapeutically, in my view, an atmosphere of love is essential. The concept of love in the English language is extremely difficult to use. The Greeks had a lot of different words for it. Love is essential in a therapeutic situation. It is worth commenting on, because it is becoming more important. The other thing which I think is important is to continue with the female attendant.

Dr. Fremont-Smith: It is a great advance to have people who are courageous enough in a scientific meeting to speak of love. I am delighted, Dr. Ling, that you brought it up. It is crucial. Scientists in general are willing to admit rather reluctantly that they love science. But for doctors to admit they have to give love of the appropriate kind, as described by Dr. Kramer, to their patients is something we are afraid of. Because of the suffering of patients and the call upon us as medical students for a kind of love that we don't know how to manage, we don't know how to put it in the right frame of reference. We have had no training in this respect at all. We tend, rather, to build up our defenses against it. We see this especially in surgeons who have to do the cutting but who may be able to show some expression of love only post-operatively. But this is an important aspect of the situation, and we have to make it respectable in the nursing profession, in the medical profession, and in the whole therapeutic team. The appropriate way to manage an expression of love is not only highly respectable but absolutely a demand.

Dr. Buckman: First, I agree with Dr. Godfrey on the importance of the setting. It makes all the difference in the relationship of the patient and the therapist or the therapeutic team. But at the same time, I

believe that it is useless for many forms of disease. In other words, if you have a well sustained therapeutic relationship between the patient and the therapist, you can give this drug to any diagnostic category. It does not mean that you have to give it indefinitely and necessarily expect a cure. Six or seven years ago when we wrote up a list of contra-indications, this was really a guide for excluding those patients who we felt would not profit from LSD treatments, so we could give more time to people we felt it would help. We gave LSD to schizophrenics not because we necessarily believed that this was a treatment for schizophrenia, for there is no such thing. We still have to accept the fact that there are still a number of incurable diseases. LSD is not the answer to all forms of mental illnesses, but at the same time, no diagnostic category need necessarily exclude LSD in treatment.

Dr. Fremont-Smith: May I comment, Dr. Buckman? Wouldn't you agree that there is one contra-indication and that is a bad setting?

Dr. Buckman: Yes.

Dr. Fremont-Smith: It seems to me that it is important to say this because this implies that the training, the teamwork and the whole concept of the therapist are involved. It is important to put this contra-indication in a positive sense, rather than say there is no contra-indication. This would mean that any doctor could treat any patient with LSD, and we certainly don't mean that, if we exclude the setting.

Dr. Buckman: This is important. It was the main theme of the meeting in Europe about a year ago to try to form an international association. We stressed that, as with any form of psychotherapy, this requires training—to learn, there is only one way, to use it with somebody who has used it for a number of years before. This is not a drug that one can prescribe and send in to a patient. One has to learn a technique over a period of years with other people working in the same sphere.

Dr. Godfrey: But we must know not only the establishment and setting, but also the attitudes. I presume you have included this in your settings. I feel that sets explain more to me—the attitudes of the treatment team.

Dr. Fremont-Smith: Set and setting.

Dr. Godfrey: Right.

Dr. Abramson: It might be worthwhile at this time to discuss the experiments on test subjects. This is the same group of non-psychotic paid volunteers I have been talking about for the last seven or eight years. It was most interesting to see that they reacted in the same way that patients do, although they received twenty-five dollars and dinner at my home on the north shore of Long Island. The set and the setting were perfect from all the points of view that we could think up based on our early experiences in 1951 and 1952. It turned out that my subjects were extraordinarily vulnerable even to minor changes in the setting. For example, when the head of the laboratory came up (at that time we were working at the Biological Laboratory), some

of the things which he did led a subject to have a violent anxiety attack which took two hours of psychotherapy after the experiment to ameliorate. When Dr. Ruth Fox came to see the way in which these experiments were run, I had to discuss her visit with them two weeks in advance. I had to get their permission to bring in any outsider. Severe paranoid reactions were set up in the group, and the group was almost destroyed when a psychiatrist I had employed to help me manage the group turned to me and said during a session, "Do you think these ergot drugs produce chronic brain damage?" You see, the chronic brain damage that was proposed in a recent, erroneous editorial of the A.M.A had its precedence, I would say, five or six years before the editorial appeared. This was also true in these test subjects. Minor events or major events of the day before influenced the answers to the questionnaire and the attitudes of the subjects. We found in our normal test subjects that large doses would not produce any responses up to 225 mcg if there was something they did not want to talk about in a group situation. This is important. The reaction in a so-called normal test subject may be misleading. If the individual is *very* ashamed of homosexual behavior, this is not unconscious resistance. If he feels that he must talk about something, he will talk about it. So even in the test subjects Dr. Godfrey's point *re* the set and the setting is most important. I believe this accounts for the differences which have been quoted between Hoch and Malitz' subjects and my own group. If you go back over the literature, you will see that this group at the New York State Psychiatric Institute, in their studies on normals, claim that the results were poor in their test subjects because none of them wanted to take it again and that it was an unpleasant experience for them. As I mentioned earlier in the Conference, it was all I could do to prevent all of Brookhaven, people in the school system, friends, and so on, to come to dinner with us on Friday evenings to take LSD, because, as Dr. Godfrey pointed out, the set and the setting were most important.

Dr. Fremont-Smith: Dr. Godfrey, will you make a final statement or two.

Dr. Godfrey: I would like to say something about future plans. I am now using what I recognize as psycholytic therapy on individuals in multiple doses of LSD in an analytic setting. Next I intend to work with setting up treatment of character disorders using LSD, but always aiming toward the psychedelic reaction.

Dr. Unger: That reference to brain damage was confusing. I would like to have it clarified for the record.

Dr. Abramson: In the field of pharmacology there are certain drugs which have vasoconstrictive action. For example, when using ergotamine in the treatment of headache, we always caution the patient that he shouldn't take more than a certain number of injections per week because of the danger of symptoms due to vasospasm. All of these ergot drugs may have these characteristic. It is perfectly natural for a doctor who is unacquainted with the dosage scale to think of what the pharmacological effect of an ergot derivative is, and that's all this

physician was doing. He was thinking out loud but in ignorance, because the dosage of LSD is so small that a vasoconstrictive action due to its ergot characteristics is minimal.

Dr. Fremont-Smith: Almost no drug known gives vasoconstriction in the cerebral blood vessels. This is one of the efforts that has been made over many years in Dr. Stanley Cobb's laboratory, to find a drug that would produce real vasoconstriction in the cerebral blood vessels. The best constriction you can get is by blowing off carbon dioxide, when the doctor says to the patient "take a deep breath, another, another deep breath!" After the seventeenth deep breath while he is listening carefully for rales, the patient keels over because he has blown off his CO_2 with vasoconstriction of the brain from CO_2 deprivation.

Is LSD of Value in Treating Alcoholics?

Ruth Fox, M.D.*

I propose to give a brief account of the results of treating twenty severe alcoholics with a combination of several therapies, LSD being but one of them. Although it is difficult to evaluate the specific role of the LSD in the over-all improvement of these alcoholics, I will try to do so in my final summary. All of these patients were intelligent, well educated, in the middle-or upper-income bracket, and most had had successful careers in the fields of business, medicine, the law, the arts, writing, teaching, homemaking, etc., before their entrapment in the addiction to alcohol.

Of the twenty patients, twelve were men and eight were women. At the first contact twelve were married (only five of these marriages could be considered even moderately successful), seven were homosexual (four men and three women), thirteen were living in a family setting, nine were employed (most had lost jobs in the past because of drinking), and five were housewives. Fifteen were diagnosed as having a character disorder, two as having an anxiety neurosis, two as schizoid personalities, and one as psychopathic. All had had a history of severe alcoholism of from four to thirty-five years duration, the average being fifteen years. The age range was from twenty-five to fifty-six, the average age thirty-eight. Most had had previous psychiatric treatment for many years with minor benefit. Eleven had originally had unsuccessful Alcoholic Anonymous contacts. One had benefited greatly from A.A., and eight had refused ever to go.

Most of the patients still showed many of the character traits, in greater or lesser degree, that we have come to feel occur in most persons who have become addicted to alcohol. Among these were an extremely low frustration tolerance, inability to endure anxiety or tension, feelings of isolation, loneliness, depression, devaluated self-esteem, a tendency to act impulsively, a repetitive "acting out" of conflicts, and a tendency toward masochistic self-punitive behavior. In addition, there was usually marked hostility and rebellion (conscious or unconscious), and repressed grandiose ambitions with little ability to persevere. Most showed strong dependent needs, frustration of which leads to depression, hostility, and rage. All were egocentric, and many showed a disturbance in their sexual functioning—immaturity, sexual fears, potency disturbance, frigidity,

* Medical Director, National Council on Alcoholism, Inc.

homosexuality—overt or latent, or a sado-masochistic orientation. Frank psychotics were excluded. The life situation in these patients ranged from poor to chaotic with poor interpersonal relations, especially with the spouse and children, but also at work and in the community.

After the usual consultations with the patients and their families, a multidisciplinary type of therapy was instituted. It consisted of physical rehabilitation, Antabuse, psychotherapy (both individual and group), psychodrama, and closer affiliation with A.A. The psychodramatist was Miss Hannah Weiner of the Moreno Institute. About one-half were given relaxation techniques through hypnosis, and one phobic patient was treated by the reciprocal inhibition technique of Wolpe. (18) All had been under therapy with me for periods of time ranging from three weeks to eight years, the average being 2.2 years, before LSD was given. Fifteen had been in weekly group therapy or psychodrama sessions for from a few weeks to four or five years intermittently, the average attendance at group therapy being 1.5 years. Though most had made considerable progress, and a few had attained a fair degree of sobriety, none had had the intrapsychic change which seems necessary for the alcoholic if he is to recover fully. In spite of the above therapies, most still complained of a sense of futility and emptiness, and many were suspicious, felt exploited, were demanding and irresponsible, had temper outbursts, and were depressed, lonely, and self-pitying. Sobriety, in those few who had attained it, had not brought them much happiness or tranquillity.

In view of the several reports of successful treatment of alcoholics with LSD, it was decided to try it with these twenty patients. The experiment was started in December, 1961 and continued until March, 1962, so that the present report represents in most cases a three-year follow-up.

After two to three weeks of preliminary interviews, during which time the individual wrote a short biography of himself, a description of his main problems, and what he wished to accomplish with the treatment, information was given to him about the LSD experience with assurance as to its safety, a description of the altered state of consciousness he would probably experience, and a statement that several investigators had found it to have had a beneficial effect on others with a similar problem. Each patient was treated in a fairly pleasant private room of a hospital and kept overnight. The treatment team consisted of myself, an especially perceptive and intelligent psychology student and teacher, and an attractive, supportive nurse. All of us had had two or three previous LSD experiences ourselves. The usual dose of LSD was 200 mcg (five had 100 mcg, twelve had 200 mcg, and three had 300 mcg) given by mouth at 9 **A.M**. Ten cases had a single treatment with LSD, five had two treatments, three had three treatments, one had four treatments, and one had six treatments. Some member of the team, usually all three, was present for a period of eight to ten hours while the patient was under the drug. After the drug effect had worn off, the patient was given dinner and Seconal (gr. *iii*) for sleep. All were discharged the following morning.

Several of the patients did undergo the type of reaction to LSD described by many other workers in the field. (1-6), (8), (10), (12), (13).

(16), (17) The reported therapeutic effects have recently been summarized by Schmiege as follows:

> Those using LSD in multiple doses as an adjunct to psychotherapy feel that it is so useful because of its ability to do the following: 1) It helps the patient to remember and abreact both recent and childhood traumatic experiences. 2) It increases the transference reaction while enabling the patient to discuss it more easily. 3) It activates the patient's unconscious so as to bring forth fantasies and emotional phenomena which may be handled by the therapist as dreams. 4) It intensifies the patient's affectivity so that excessive intellectualization is less likely to occur. 5) It allows the patient to better see his customary defenses and sometimes allows him to alter them. Because of these effects, therapists feel that psychotherapy progresses at a faster r a t e.... Those who administer lysergic acid in a single dose have as their g o a l... an overwhelming reaction "in which an individual comes to experience himself in a totally new w a y...." Frequently, this is accompanied by a transcendental feeling of being united with the w o r l d.... Some spectacular, and almost unbelievable, results have been achieved by using one dose of the drug. (14)

During the first hour or two of the reaction the patient may try desperately to hold onto his usual defenses, resisting the new consciousness brought about by the drug. Reassurance to the patient that it will be safe to explore this new state of awareness as something revealing and potentially rewarding will help him to surrender to it, if the therapist gives sufficient verbal and physical support, such as holding his hand, rearranging his covers, putting an arm around his shoulders, etc. Without this support the patient may become confused, frightened, angry, paranoid, and violent. However, if helped to ride through these signs of resistance, the quality of feeling may change, and with surrender there often comes a feeling of peace and contentment. Music, classical or nonclassical according to the patient's taste, can facilitate this change in mood and will often lead the patient into a transcendental or psychedelic experience. (9) A few poetic phrases, or contemplating a flower or a beautiful painting, may also help to set the pleasurable mood.

Episodes of the patient's past may be re-evaluated with an enhanced ability to understand and to have compassion for others as well as for himself. He may see parents, siblings, and others in his past and current life in a new light. This new understanding may come with an overwhelming feeling of tenderness. He may remember his own birth directly or symbolically with great gratitude to his parents for life itself. As he abreacts he gets rid of much of his hatred, frustration, and guilt. He comes to see himself for the first time as he really is without his defensive wall around him and without his load of guilt. He begins to re-evaluate his past life, his present situation, his relationship to himself, to others, and to the universe. He relinquishes many of his prejudices and untenable concepts, shifts many of his basic beliefs, and begins to experience himself as a whole person and to see himself as "fitting into" the universal scheme

of things. In the psychedelic experience he perceives in awe the vastness of the universe so that his own petty fears, hates, and jealousies fade into insignificance. In this transcendental experience there may be a recognition of a "cosmic consciousness." The patient often states that he feels reborn, whole, clean, grateful, and joyous, and loves all things animate and inanimate.

A few suggestions given then for future behavior may have long-lasting effects, suggestions that he will grow to understand himself better as he matures, that life can be good, that sobriety will bring greater rewards than drinking, and that the fellowship of A.A. can give his life a new focus and meaning. It is best to let the patient experience these feelings and concepts to the fullest. Psychoanalytic interpretations during such a psychedelic experience would be of no avail and might even interfere with its attainment. One of the outstanding feelings in this state of exultation is a conviction that this other consciousness is "truly there," has always been there and will always be there, and is as real as anything perceived by the five senses in the physical world.

Not every patient experiences this complete feeling of "being at one with the universe." Some never do, but some may finally attain it on subsequent sessions (cases 1, 5, 6, 10, 13). It seems that the closer one comes to it, however, the more effective and lasting is the change in personality. Maslow (11) has pointed out that such "peak experiences" may come naturally to creative persons—poets, artists—as well as religious leaders, lovers of nature, and persons in love. They may also follow a flash of meaningful insight, the discovery of some profound truth, witnessing an act of unselfish bravery, etc. James has described the mystical or religious conversion (7) which is very like the phenomenon Freud called the "oceanic feeling." Such experiences seem to have a powerful effect and can so change a person's attitude to life that he will give up forever his maladaptive responses in favor of a healthier point of view. With his greater sense of warmth and self-esteem, a greater openness to others, and his shedding of neurotic guilt, he feels free to realize his best potential. He can re-evaluate his assets and liabilities and can truly love and have concern for others, perceiving them as human, fallible, imperfect, yet striving beings as he himself is. It is hoped that he will develop a moral, ethical, and socially directed conscience.

As have other investigators with LSD, I too found that there develops an unusual empathy between the patient and the doctor while the patient is under the drug. It may be that this baring of the "soul" leads to a vulnerability and defenselessness in the patient which calls forth certain protective and mothering instincts in the members of the therapeutic team. It is like the closeness one has toward a child in trouble with a deep wish to help him. This is a counter-transference, of course, but it may be necessary for the attainment of the psychedelic response. One cannot underestimate the importance of this empathy. Indeed, a large part of the benefit of the experience may lie in the fact that three friendly persons are willing to spend the necessary eight to ten hours uninterruptedly with the patient, making him feel that at last he is receiving a love and under-

standing he has never experienced before. This may be of far more importance than the intellectual insights which can come about through psychoanalytic interpretations. It may even be more important than the LSD itself. Sechehaye stresses the value of letting the patient actually live through the experience he had longed for but had never experienced. (15)

Dynamic interpretations given in the days subsequent to the LSD experience are also of great value in helping the patient to understand himself. The notes taken by the therapist or the tape recordings of the session, plus the impressions of the experience which the patient is asked to write up the day following the treatment, give a great deal of material which can be profitably gone over, pinpointing the areas of greatest concern to the patient. A playback of the recording to the patient may stimulate further insights.

Since all of these patients had previously had and continued to have several other forms of therapy subsequent to the LSD experience, it is hard to evaluate the role of each of the various modalities used to effectuate the final improvement of the patient. In evaluating the final outcome, I considered not only abstinence but improvement in the individual's intrapsychic and interpersonal relationships. Persons have been designated as improved if, in addition to their over-all improvement, they do not have more than two short relapses into drinking per year. Moderate improvement means that they are drinking definitely less, are working, and have some improvement in their interpersonal relationships. No improvement means that they are drinking about as heavily as before and with no change in personality. Of the twenty patients, eleven (55 percent) were graded as markedly improved, five (25 percent) as moderately improved, and four (20 percent) as not improved at all. It is encouraging that sixteen patients, representing 80 percent of this seriously ill group, did show improvement at the time of a three-year follow-up. Since LSD was given to these patients only as an adjunct to their various other forms of therapy, it is difficult to know just what role it played in their recovery.

Seventeen took Antabuse, ten finally became members of A.A., all twenty received some type of individual counseling, and seventeen took part in the group therapy sessions. Ten had individual hypnosis sessions, and thirteen attended group hypnosis sessions to give them a technique for relaxation and to help them over their symptoms of insomnia, tension, and anxiety. On one patient a technique of reciprocal inhibition (18) was used because of specific phobias. A dynamically oriented type of therapy was given to ten patients for periods of time ranging from three weeks up to two years, averaging about one year each. The remaining ten patients were given individual supportive therapy of several weeks duration.

On the follow-up I tried to evaluate the role of LSD in the recovery by whether the patients themselves felt they had received benefit from the treatment. Four patients rated it as having been of great benefit, four rated it as of moderate benefit, and eleven considered it to be of little or no benefit. In one case, the LSD treatment was followed by a psychotic episode for which the patient was hospitalized for ten months. During this time she received shock therapy and eventually recovered, and then

was placed in the markedly improved group. Since this patient had had serious depressions before requiring shock treatments, it is questionable whether LSD had actually precipitated this psychotic episode. Early in this experiment two patients had paranoid reactions during the treatment and were so violent that the treatment had to be terminated by chlorpromazine. I believe now that these reactions were due to faulty technique and could have been avoided if the team had been more supportive.

Five of the eight patients who felt that LSD was of benefit had more than one treatment; four had a dose of 200 or more mcg, and four had a close of 100 mcg. Of the eight patients who had favorable results, seven had a psychedelic experience varying from slight to quite marked. The greater the psychedelic experience the greater and more lasting was the improvement.

CONCLUSION'S AND SUMMARY

Sixteen of twenty severe recalcitrant alcoholics showed improvement with a "total push" type of therapy. All patients in the group received, in addition to LSD, various forms of therapy—Antabuse, group therapy, psychodrama, affiliation with A.A., and counseling or analytically oriented psychotherapy. Few of these patients could say which form of therapy had helped them the most. This makes it hard to evaluate the role of LSD. The very fact that most patients stayed in therapy for several years is indicative of an unusual degree of motivation which in itself is an important factor in recovery. In those patients who had a psychedelic experience from the drug, my impression is that their character changes were more profound and more lasting than in the patients who did not have this response. The recall of early experiences, both traumatic and positive, with appropriate abreactions, the increase in affectivity, and the reassessment and understanding of past events aids enormously in the treatment process. Harmful defenses can be broken down and more appropriate ones can be developed. The drug can certainly make the patient more open and receptive to future psychotherapy.

If I have an opportunity to work with LSD again on alcoholics, as I hope I shall, I would give a somewhat larger dose of LSD (300 to 400 mcg) and repeat it from one to three times, or at least until a psychedelic response is attained. My results would suggest that multiple treatments do have a deeper and more lasting effect.

CASE HISTORIES

Case 1

This 31-year-old professional woman, a homosexual who had been drinking alcoholically for eleven years, had suffered from depression and attacks of explosive hostility, followed by severe guilt reactions. Her psychological tests showed that she could play the role of the predatory scavenger or the helpless parasite. She showed much defiance and was

rebellious of all constraints as a reaction formation against a strong primitive conscience and need for perfection. Her defenses took the form of flight into alcoholism and homosexuality. She saw herself as weak, incompetent, degraded, and unable to resist carrying out unacceptable impulses. She rebelled against her omnivorous dependency needs, and exhibited low tolerance for frustration.

Though her drinking pattern became somewhat less severe during the first two years of counseling, group therapy, psychodrama, hypnosis, and Antabuse, her interpersonal relationships continued to be chaotic.

The follow-up 34 months later shows that she has been totally abstinent since the second LSD treatment. Her personal life, within the limits of her homosexuality, is highly satisfactory.

Result: Marked improvement.

Case 2

This 50-year-old, much analyzed, intelligent, well-read, affable married writer had had a problem with alcohol for 25 years. In spite of some initial improvement with Antabuse, group therapy, psychodrama, and further analysis, he reverted to drinking and was given one treatment of LSD (200 mcg). He had always been a rather shy, self-effacing individual, with many doubts about his masculinity and potency. He tended to intellectualize, was passive, and lacked a sense of responsibility.

The LSD treatment was quite superficial and despite some visual distortions, few recollections and insights were developed.

The follow-up 37 months later shows that, though for a few weeks following the LSD treatment this patient seemed more open and natural and somewhat more comfortable with himself, he was unable to mobilize himself enough to get a job. He still has periodic relapses into drinking.

Result: No improvement.

Case 3

This 25-year-old, frigid, childless housewife had had a drinking problem for four years. She had been treated unsuccessfully by conditioned reflex therapy. The accidental death of her father four years previously had triggered off her excessive drinking. Her marital life was chaotic due to her drinking, and she also felt she had married beneath her. She was in New York for just a few weeks, during which time she was exposed to group therapy, Antabuse, and psychodrama.

Her LSD treatment was not productive. She talked mostly of her unhappy relationship to her mother, the recent death of her father, and her unhappy marriage. She made no attempt to analyze any of her problems and felt that the treatment had been of no value.

The follow-up 37 months later shows the patient still drinks, though not as steadily as in the past. She and her husband are reasonably happy now.

Result: Moderate improvement.

Case 4

Under LSD, this homosexual alcoholic male of 33 worked over his contempt for his mother and anger against his father and his very bright sister. "Don't ever trust a woman. They are all conniving and will let you down." Patient then became euphoric. "I feel cocky and full of drive and I see myself as a rich, attractive bachelor, attractive to women." There seemed to be few insights.

The session seemed unrewarding, though the patient states that he has been completely abstinent and better adjusted to his partner since the treatment three years ago. He attributes some of his gains in maturity to LSD, but mostly to the psychotherapy preceding and following its administration.

Result: Marked improvement.

Case 5

This 53-year-old schizoid, homosexual male artist had had a drinking problem for 36 years. In spite of 15 years of psychoanalysis, Freudian, Jungian, and eclectic, he was unable to maintain sobriety and unable to work effectively. Though sobriety was fairly well achieved during a period of two years prior to the LSD treatment through psychotherapy, A.A., and Antabuse, severe personality defects persisted such as withdrawal, detachment, marked egocentricity, fantasies of atonement, and marked hostility, especially toward women. There were feelings of inadequacy, powerlessness, and confusion of sexual role. His thinking showed much adolescent fantasy and a tendency to overintellectualize with very low affect. There existed a conflict between his very rigid set of standards and his performance, and he felt himself to be weak and ineffectual. He had worked only sporadically.

He was given six LSD treatments, the first two rather unproductive. In subsequent treatments much rich material came out, followed by a deeply moving transcendental experience. The follow-up at 37 months shows the patient still abstinent, feeling creative again, and working full time.

Result: Marked improvement.

Case 6

This 33-year-old unmarried male had had a serious alcohol problem for 15 or more years. He had had a poor employment record, felt lonely, depressed, futile and inadequate and had been alienated from his family for many years.

He improved greatly with Antabuse, A.A., and psychodrama, but continued to drink occasionally. He was given four LSD treatments with a remarkable psychedelic effect.

At the time of follow-up 36 months later he is still abstinent, is teaching, and is reunited with his family.

Result: Marked improvement.

Case 7

This 31-year-old unemployed patient, after years of hospitalization for a thoroughly incapacitating alcohol problem with marked anxiety, and after many years of psychoanalytic therapy, attained sobriety with the aid of Antabuse, group therapy, psychodrama, hypnosis, and analytically oriented therapy. Though he became abstinent, he suffered from a deep-seated sense of inadequacy and from worries about his sexual role and performance. In spite of an unusual intelligence, he had felt frightened and insecure all of his life. He was subject to attacks of severe panic, always slept with a gun under his bed and traveled with one in his car.

In both treatments with LSD he went into an agitated paranoid state and became so violent each time that the treatment had to be terminated with chlorpromazine. Neither experience was of any apparent benefit.

Follow-up 35 months later reveals that the patient is happily married and is working, but that he still drinks for two or three days two or three times a year.

Result: Moderate improvement.

Case 8

This 32-year-old, extremely immature psychopathic young man had been drinking alcoholically for twelve years and had been hospitalized many times as a result. He had also been intermittently addicted to amphetamines. He had been married three times, was unemployable, had marked hostilities toward his over-protecting mother and contempt for his weak father, was demanding of money and attention, was extravagant and inordinately dependent, and reacted with rage when his demands were not met. Extremely scattered in his thinking, he was filled with many deep-seated anxieties, fears of homosexuality and perversion, and confusion about his sexual role.

Two treatments with LSD were unproductive and the follow-up at 36 months shows no change. He is still heavily addicted to amphetamines and drinks sporadically.

Result: No improvement.

Case 9

This much analyzed 33-year-old homosexual and alcoholic professional woman suffered from depression, anxiety, and crying spells. She became abstinent during two years of therapy with Antabuse, A.A., and psychodrama, but still felt hopeless and inadequate, ruminating about various deaths in her family which had occurred in her childhood.

Two treatments with LSD resulted in a remarkable disappearance of all of her symptoms. She abreacted with crying and agitation, but ended with a psychedelic experience.

Follow-up 12 months later showed her still abstinent, working, and cheerful. She could not be located for the three-year follow-up.

Result: Moderate improvement.

Case 10

This 41-year-old married businessman had marked feelings of inadequacy, much conflict, explosive attacks of anger with a chronic underlying hostility, masturbatory guilt, syphilophobia, sexual problems, marked anxiety, and a deep sense of failure and inadequacy. He had had a problem with alcohol since the age of 16, a problem which had become uncontrollable five years prior to treatment. The patient showed considerable improvement with the aid of counseling, Antabuse, group therapy, and psychodrama, but because he still had intermittent episodes of drinking LSD treatment was undertaken.

Three treatments produced an excellent response with a reliving of many traumatic situations, much abreaction and a psychedelic experience during the third treatment.

The follow-up 36 months later shows complete abstinence with the exception of one minor slip in the year following the LSD. He is relaxed, happy with his family, and has had several promotions.

Result: Marked improvement.

Case 11

This 43-year-old corporation executive had had a moderate drinking problem until the year before treatment when loss of control and morning drinking became manifest. Though the patient had become abstinent through participation in group therapy and psychodrama, LSD was administered in the hope that he might overcome his severe inhibitions, a sense of physical and mental inadequacy, marked compensatory intellectualization, unfounded fears of homosexuality, lack of emotional expression, and a feeling of unworthiness.

Under the drug the patient became aware of these previously unrecognized character traits. This breaking down of the defensive system was accompanied by a deep feeling of release and gratitude. The patient felt that the experience was one of the most important events of his life, and had served to liberate his feelings toward himself and others. These gains have persisted until the time of follow-up 35 months after the single treatment.

Result: Marked improvement.

Case 12

This 46-year-old intelligent, married scientist had had a drinking problem for twenty years. He had always felt uncomfortable, shy, awkward, isolated, and depressed with much veiled hostility, especially towards women. He had been a compulsive gambler in the past. He suffered from poverty as a child and had always felt socially inept in spite of a successful career. The patient had had extensive psychoanalytic therapy in the past without benefit. Counseling, group therapy, and especially psychodrama, over a two-year period, helped with some of his personality

problems, although he continued to have mild drinking episodes about once a week. An attempt to produce an aversion to alcohol under hypnosis was unsuccessful, although this technique helped to overcome some of his nervousness and insomnia.

The treatment of LSD for this patient was extremely unpleasant. He felt threatened, angry, and paranoid as he relived the painful memories from childhood. He was physically uncomfortable with persistent nausea. He made no attempt under the drug to resolve any of his difficulties.

The follow-up 34 months later shows that the drinking, which used to occur about twice a week, now occurs about once every three months. There has been much improvement in his interpersonal relations. He attributes his improvement mostly to psychodrama.

Result: Moderate improvement.

Case 13

This attractive alcoholic married housewife of 39 years had two LSD treatments. Since adolescence she had been beset with severe panic attacks, incapacitating phobic reactions so that she could not leave the house unattended, feelings of inadequacy, periods of depersonalization, perfectionistic tendencies, fears of insanity, and inability to love wholeheartedly. Fairly extensive psychoanalytic experience had not benefited her, although group therapy, Antabuse, psychodrama, hypnosis with age regression, treatment by reciprocal inhibition, and A.A. kept her fairly sober and somewhat less phobic and anxious.

Following the first LSD experience in which she relived her disturbed childhood, she was completely symptom-free for three months. Believing then that she had never been actually alcoholic, she tried to drink for two weeks and had to be hospitalized. During this relapse she had a return of all of her initial symptoms but to a somewhat lessened extent. These were much improved after the second LSD experience seven months later.

Follow-up 23 months after the second LSD experience shows patient to be entirely symptom-free, abstinent, caring happily for her husband and children. She has been working full time for over a year. Patient is now studying to be a leader in the self-help group, Recovery, Inc.

Result: Marked improvement.

Case 14

This 34-year-old unhappily married professional woman had feelings of worthlessness, hostility, and depression. Drinking had been a severe problem during the past eight years. Antabuse and psychodrama produced abstinence but her personality problems were incapacitating. One treatment of LSD at the time seemed to be of no value, but within a few months she gradually improved.

Follow-up at 12 months showed her still abstinent. She could not be located for the three-year follow-up.

Result: Moderate improvement.

Case 15

This 34-year-old homosexual male who had never been employed had had a severe drinking problem for ten years before treatment. In spite of the fact that he had some feelings of freedom and exaltation under LSD, he relived very little and revealed almost nothing, showing anxiety whenever an attempt was made on the part of the therapist to delve deeper. He continued to take Antabuse and attend psychodrama, with occasional individual counseling sessions and attendance at A.A.

Follow-up shows that patient has been abstinent for 35 months and has shown marked personality improvement. He spent two years studying in Europe and has returned now to a position in New York.

Result: Marked improvement.

Case 16

This 52-year-old unhappily married sales manager had had a severe drinking problem for approximately 25 years. After six and one-half years of sobriety, he resumed periodic drinking five years prior to the LSD treatment. The patient was known to be negative, difficult to live with, hostile, suspicious, and depressed, even during periods of sobriety. In addition, he had marked feelings of inadequacy, futility, depression, and impotence. There also existed a history of barbiturate and terpin-hydrate addiction.

The patient reacted to LSD with marked agitation, panic, hallucinations, and paranoid delusional thinking. He became combative, tore the clothing of the therapist and hurled a hospital tray across the room. To control him required physical restraints and Thorazine administered intramuscularly. During the treatment there was no attempt on the part of the patient to resolve any of his underlying psychological disturbances.

Follow-up 14 months later showed that there was no improvement in drinking pattern or in his behavior. Patient was killed in automobile accident, driving his car while drunk.

Case 17

This 30-year-old married alcoholic woman, without children, had had a very deprived childhood. She was infantile, demanding, and hostile, and had marked feelings of unworthiness. She had considerable artistic talent which she was unable to express. In drunken rages she slashed her husband's clothes, broke furniture, etc. Through two years in analysis, combined with Antabuse, group therapy, group hypnosis, and psychodrama, her drinking episodes became less frequent and less violent. She still had many personality disorders, depression, feelings of isolation, futility, and outbursts of rage, although she was somewhat helped by Antabuse and psychodrama.

She was given one treatment of LSD. With marked affect, she relived many of her childhood traumas.

Follow-up 34 months later shows that though the patient continued to drink occasionally during the year following the LSD treatment, she has been completely abstinent for the past two years, is taking art lessons, and carrying out her duties as a housewife. How much of this is due to LSD we are unable to say, since her beginning improvement antedated the administration of the drug and she did not become abstinent until one year after the drug was given. She herself does not attribute her improvement to LSD.

Result: Marked improvement.

Case 18

This 53-year-old much analyzed married woman, with two sons, had suffered for many years from devastating anxiety, mitigated somewhat by alcohol and barbiturates. She had had two series of shock treatments five years and three years previously for depression. She had been in a number of hospitals, had tried various tranquilizers and sedatives, Antabuse, hypnosis, group therapy, and psychodrama without improvement. Superimposed on her neurosis was a severe alcohol problem of ten years' duration. Since adolescence she had feared going out alone, feared traveling in various vehicles, and suffered from fears of insanity. She was sexually frigid and considered sex tawdry, dirty, and degrading. She hated her dominating husband and drank to punish him for his indifference to her condition.

LSD produced anxiety, anger, feelings of unworthiness, and deep depression and agitation. The day following the treatment her depression and anxiety were so great that she had to be hospitalized for ten months and given shock therapy.

Follow-up at 36 months finds her symptom-free, abstinent, and working full time.

Result: Marked improvement.

Case 19

This 56-year-old homosexual unmarried woman had had a severe drinking problem for a period of about 25 years. During her episodic drinking she reacted with hostility and violence towards herself and others. After many years of analysis the patient remained abstinent for months at a time with the aid of Antabuse. However, she began the uncontrolled use of barbiturates, which required hospitalization several times. She identified with her arrogant father, and adopted a dominating, arrogant, and defiant pattern of adjustment to life situations and interpersonal relationships.

Under LSD she relived many of her childhood traumatic experiences, feeling tortured, hostile, and self-pitying. Many of her memories suggest fixation at a sadomasochistic level. At no time in the patient's session was there any attempt on her part to resolve any of her problems. She regarded the entire experience as a nightmare and of no value.

Follow-up 24 months later shows no improvement in patient's drinking pattern or behavior.

Result: No improvement.

Case 20

This 36-year-old unemployed homosexual male had been sober for three years in A.A. before presenting himself for treatment. His drinking history began at the age of 19 while in the armed services. He always had been extremely inhibited and filled with rage, especially toward women. He had felt socially inept and hated both of his parents who he felt had deprived him. He was currently being supported by an older homosexual partner, towards whom he felt great hostility. He had been extremely immobilized and spent a great deal of time in bed, writing stream-of-consciousness material that seemed to have no particular point. Though he had worked on an assembly line in the past and had been in the Air Force, he had become increasingly incapacitated and dependent. He was anxious, immature, and narcissistic, with poor impulse-control and poor reality-testing ability.

One LSD treatment was fairly unpleasant for him. He was depressed, anxious, and paranoid, extremely suspicious of the treatment team. In spite of reliving many traumatic childhood events, he did not seem to get a better understanding of them.

Follow-up 33 months later shows that this individual, though remaining sober in A.A., seems to have had little or no benefit from LSD. However, he has been working for the past two years.

Result: Moderate improvement.

DISCUSSION

Dr. Savage: You mentioned that some of your patients were in treatment with local analysts, and I'm curious to know what their reaction was to treatment. Were they supportive, or how did this work out?

Dr. Fox: Most of these patients had had analytic treatment in the past, sometimes for many years, which had been generally unsuccessful as far as the drinking pattern was concerned. Most of the patients came to me after their analysts had washed their hands of them, asking me to take them over. I did continue with all of these patients after the LSD, some for individual psychotherapy and some for group treatment. Just to illustrate how ineffective psychoanalysis can be unless there is total sobriety during the process, I might mention one doctor, a psychoanalyst himself, who had had seventeen years of "depth analysis" but whose drinking grew steadily worse. After one extremely severe bout, he was willing to start on Antabuse and was sober for the ensuing seven years. During these seven years there was

just one one-night relapse into drinking, when he gave up taking Antabuse and tried to see if he could do controlled drinking.

Dr. Fremont-Smith: Did he have LSD, too?

Dr. Fox: No, he responded so well to Antabuse that I did not think LSD was needed. Though, of course, Antabuse is not a total cure, it does help maintain sobriety while the patient works on his underlying problems, which may be social, psychological, health, family, financial, etc.

Dr. Fremont-Smith: I'd like to comment on your work and tell you how pleased I was with your emphasis on the multiple facets in the treatment. There is no single form of treatment in psychotherapy; it's always multiple. There are always environmental changes. There's always the relationship with the therapist and the family. There are other factors going on, so our LSD or our psychoanalysis is never the treatment. It's one of the many in a total program. I think this deserves much more emphasis. Then when we begin to evaluate again, we won't get caught thinking that we are evaluating the effect of LSD or that our psychological test procedures are evaluating this or that form of treatment. They may be, but they are evaluating a total treatment and may possibly be giving us a clue to the impact of one aspect of the multiphasic parts of the total treatment.

Dr. Martin: On the other hand, if the original trauma has been very early, in relation to the mother and perhaps the breast feeding, as is often the case in alcoholism, I would think that possibly more attention might or should be given to the individual attachment and transference relationship to the mother figure. I wondered if Dr. Fox was able to use the analytic technique as well as supportive therapy with her team, whether she tried to develop an individual relationship, an analytic interpretation to the patient.

Dr. Fox: Yes. I had worked with most of these patients usually for many months or even years before using LSD. I tried in my LSD sessions to use an analytic approach during the first two to three hours. I then tried to produce a psychedelic response by giving pleasant suggestions to the patient, playing music, etc. After the LSD treatment was over, I saw each patient several times during the subsequent two weeks and went over in detail as much of the material as I could, using psychodynamic interpretations.

I was extremely interested in Dr. Martin's technique in which she uses much bodily contact. I have found that in psychodrama, with the reliving of actual past events there is a great deal of feeling and a great deal of therapeutic acting out in which there is much bodily contact between patients—hugging, kissing, pushing aside, being angry, etc. A patient may be playing a role of himself as an infant and may be cuddled by another patient playing the role of mother or father. Even without psychodrama or LSD, I have found that it helps in a doctor-patient relationship if one occasionally does touch the patient, perhaps by a pat on the back or an arm around his or her shoulder. The longer I work with patients the freer I feel in

this kind of close relationship. It does not ever seem to result in an excessive amount of transference on the patient's part, nor has it increased their dependency. Alcoholics need all the reassurance they can get, and one should be nonverbal as well as verbal.

Dr. Martin: How many treatments did each patient receive?

Dr. Fox: Ten of these patients had one treatment, two had two treatments, and two or three had three treatments. One patient had six in all, spread out over one and a half years. The average number of treatments was about three. The one who had six treatments was an extremely schizoid homosexual artist whose first treatment was extremely unpleasant, with much weeping and reliving of painful childhood memories. The second treatment was less terrifying to him, but he still felt himself bound down. In the third treatment, he felt completely liberated and saw himself as a fountain gushing high up in the air. In this session he also saw himself being thrown by his father down his mother's throat. But he also saw at his mother's feet a tiny kernel which he said was his own real self and that that little kernel was going to develop into a strong adult. He then went through many symbolic experiences of death, rebirth and growth. In the fourth session he saw himself as a small and puny tree, the roots of which he could also see and which were shriveled and partly scarred and damaged. He said, "That tree is me. I will sit here by the side of the tree and wait for it to develop into a strong and upstanding tree." The patient was quiet for a while and then remarked, "It is taking about two years for this tree to grow." Actually he was fairly silent for about forty minutes and then said, "Now the roots are entirely healed. Those roots represent my unconscious. I will never have to worry any more about what happened to me in childhood. I don't need any more analysis because the wounds from my past are now healed." The last treatment with LSD was entirely a psychedelic one in which he felt himself as part of some universal whole. When I interviewed him at the three-year follow-up, he said, "All that LSD did for me was to confirm what I had learned through psychoanalysis, but in a much more vivid and final way."

Dr. Fremont-Smith: Do you think that the doctor's psychoanalysis, even though it lasted seventeen years, was indeed a preparation, an important preparation? Or do you think it was largely wasted?

Dr. Fox: Discussing his years of analysis, the psychoanalyst said, "You know, I had all the insights that I needed. My various analysts had gone over my childhood traumatic experiences over and over. I listened but I never could seem to change my behavior. As long as I drank I could not act on any of the insights I had received. When I actually stopped drinking, the insights made a great deal of sense, and I could begin to utilize and act on them." Professionally he came back very well, wrote one or two books on schizophrenia, and trained many young analysts. He was an extremely gifted and imaginative, but somewhat schizoid personality. The only treatment for this particular patient was Antabuse and an interview with me every three

to four months for the first two years. After that he was on his own, gave up the Antabuse after two years, and never did revert to drinking.

Dr. Hoffer: I'd like Dr. Fox to comment on the organization for the treatment of addicts called Synanon, because the founder originated the idea after having an LSD experience.

Dr. Fox: That was Chuck Dederich, who did have LSD in Los Angeles. I understand from someone who helped administer it to him that he did not gain much from the experience, but perhaps he gained more than he realized. Soon after the LSD experience, he started an A.A. group which a few addicts attended. His authoritarian and dictatorial manner was not acceptable to the A.A. members, and they dropped out. However, more and more addicts began to come, until they finally had enough recovered addicts to open Synanon House in Santa Monica, California. I have visited their headquarters in Santa Monica and Westport, Connecticut several times. Though they do not keep statistics, they believe that they have roughly about 300 recovered drug addicts throughout the country. They have five or six houses now. I was favorably impressed at what I saw. They had a few women patients who, after being "clean" of drugs for about a year, were able to have their children live with them at Synanon House and go to school in town. There were, I believe, 14 or 15 children there when I last visited in Santa Monica about two years ago, who ranged in age from two weeks to about 15 years. Synanon attempts to become a family for its residents. They also have started a factory called Synanon Industries where they make plastic objects. A few of the residents work out in the community. Many become leaders and help to get new Synanon houses started.

A Synanon meeting is not like an A.A. meeting. There is nothing religious about it. They deal with practical here-and-now questions and quickly cut through all the rationalizations, projections and denials. One of the leaders said to me, "We say to them when they first come in, 'We understand you because we have done the same things that you have done. You are really just infants and don't know how to go to the bathroom and we are going to start teaching you.' " Most newcomers accept this philosophy and start off by doing the most menial work around the house, such as cleaning the toilets, etc. As they progress they also are given more and more important jobs. There are frequent group therapy meetings which are not at all "permissive." Their "digs" which means discussions in depth are very interesting. They write a quotation on the blackboard, often of a philosophical nature, and then each one tries to explain what it means to him. Some answers are extremely interesting, showing a depth of perception. I met one man of twenty-four who had dropped out of school at fourteen, had become addicted, and had been in and out of jail for ten years. After joining Synanon he studied enough on his own to pass the high school equivalency test and finally entered the University at Santa Monica.

Synanon needs money particularly, and I believe it is worthy of support. Many professionals look askance at Synanon, but my own feeling is that in spite of its imperfections it shows great promise.

Dr. Pahnke: In line with what Dr. Savage said about referrals from other doctors, you mentioned an analyst. I wonder if anyone here who has worked with LSD has had any experience in treating patients of other doctors, who might refer a patient for an LSD session, and then take the patient back and continue working with him in therapy. Has anyone had any experience with this, and does that kind of technique work?

Dr. Fox: I have had a few patients brought in by their doctors specifically for LSD. I suggested that the doctor be present during the LSD treatment. In one or two cases it seemed helpful to the psychoanalyst in understanding the patient. In others I could see no benefit.

Dr. Ward: I had several patients like this. It worked out well for them, also for the referring physician. There were about five patients, three accompanied by their therapist during the LSD session, the other two not. One has some problems in separating oneself from the patient and sending him back, but it really isn't too difficult.

Dr. Fox: Quite a few doctors send me their patients, saying, "I want to continue with the patient on a therapeutic basis. But would you put him in one of your groups, and would you be willing to give him Antabuse?" This has almost always worked out well. There has never been anything but cooperation between the referring physician and myself. Roughly one-third of my patients in group therapy are currently under treatment with other doctors, and no conflicts have arisen so far.

Dr. Eisner: I've worked a great deal with other doctors. I feel like a specialist. They refer patients to me for the LSD. The patients then go back to continue their therapy. There have been several outcomes. Sometimes the doctor states it's a difficult patient and they want help. Second, they want to learn the drug technique. Some are like Virginia Johnson who went on to develop her own Ritalin technique. Fourth, there are doctors who cooperate with me and learn to use the technique I use. Thus there are many different combinations possible, and there's no difficulty in the double transference—it's just a figment of other people's imagination.

Dr. Fox: That's true.

Dr. Abramson: Patients have been referred to this hospital by psychoanalysts who have been present at the session, and it worked out very well indeed. However, there has been a difficulty with double transference. It isn't a serious difficulty, I think we handled it well. It should be handled in this way: if the patient wants to switch to the doctor to whom he's been referred, the consultant physician must observe all the usual ethics of medicine and must refuse the patient.

Dr. Eisner: This is a marvelous opportunity for manipulating. There are patients who are good at manipulating—they manipulate mother and father. But if the two doctors stand together and there's a clear set of rules, the problems are worked out.

Dr. Savage: You mentioned that you get good results from Antabuse and are comfortable working with it. Would you consider randomly assigning a patient to use Antabuse or LSD and see how it helped?

Dr. Fox: This would, of course, be ideal, but my chief interest is not in research, but in getting the patient well. I firmly believe that a multidisciplinary approach is needed for alcoholics. Perhaps in the future we will be able to tailor the treatment to the individual patient. I am all in favor of control studies. But I doubt if they can be of much value unless they are carefully designed ahead of time with carefully matched control patients.

Dr. Savage: Both are helpful, so you wouldn't be withholding.

Dr. Fox: In spite of having seen about 3,000 alcoholics in the past 25 years, I am not in a position to say that one treatment is better than another. For many years I had only A.A. to help me. Now that there are A.A., Antabuse, and group therapy, the results are certainly improving remarkably. I would roughly guess that in fairly well motivated patients who are intelligent and committed enough to stay under therapy for about two years, we can expect a recovery rate of about 70 percent. Of course, many patients are not at all motivated to stop drinking, so that the first job of the physician is to try to initiate this motivation, with patience, forbearance and encouragement that life can be better without alcohol than with it. A surprising number can be motivated to undergo this total-push type of therapy.

Dr. Fremont-Smith: Dr. Hoffer, before you ask your question, I have been asked to ask you a question. Would you tell us the total number of alcoholics and give us the rough estimate of how many improved in your series?

Dr. Hoffer: We have treated over 600 since 1953 without follow-up. Of the 600 in the seven or eight sample studies done by many people, a third was considerably improved, a third was reported to be better, and the other third showed no improvement. Now, I just want to disagree with my friend, Dr. Fox. I would like to state categorically that the double-blind is not scientific, has never been validated, and has been repudiated by mathematicians. It is a theoretical procedure which has never been proven, as far as I can tell, and I have challenged many people to give me evidence that the double-blind does what it is supposed to do. I think we've been sold a bill of goods.

Dr. Fremont-Smith: Ladies and gentlemen, before you come to a close, I'm going to give you all a bit of comfort because I have found, after many years of study, the right definition for "scientific," since that is the issue at the moment. I was faced with this issue more than thirty years ago. I had a terrific struggle with myself and finally reached complete agreement with myself. Whether you call this a psychedelic experience or not, I'm not sure, but it was an experience. I will now share with you the proper definition of what is scientific: *that which lends predictability to phenomena is scientific.* This is all you need to know; I think that Dr. Fox is scientific.

The Psychedelic Procedure in the Treatment of the Alcoholic Patient

Albert A. Kurland, M.D. *

Sanford Unger, PH.D. **

John W. Shaffer, PH.D. ***

Out of the body of information that has accumulated over the past decade on the psychedelic procedure (or psychedelic psychotherapy), certain issues have at least become somewhat more clearly delineated. Let us begin by identifying some of these in order to set the framework for outlining our own experience and experimental program at Spring Grove State Hospital.

Our program began with an attempt to replicate the favorable findings reported by a series of Canadian investigators. However, it became quickly apparent, as a first issue, that there were great variations in the intensity and nature of the reactions achieved. We have come to the position of classifying the LSD exposure as having been "successful" if at least one "psychedelic peak" has been achieved (or what has otherwise been described as a transcendental, mystical, visionary or conversion-like experience), from which therapeutic effects might evolve in a relatively brief period of time.

The range of reactivity, however, has raised many questions as to the determining factors. Is the question one of dosage, high or low? Does the personality makeup of the patient play a role? What are the considerations in preparing a patient for the experience? What are the indicators for determining the point of the patient's maximum readiness and receptivity? How may the set and setting be structured to yield the most favorable effects? What should be the composition of the treatment team? How should they be trained?

A second order of considerations is related to the level of remission

* Director of Research, Department of Mental Hygiene, Maryland.
** Acting Chief, Psychosocial Research, Spring Grove State Hospital, Maryland
*** Chief, Behavioral Sciences, Spring Grove State Hospital, Maryland.

attained and the criteria utilized in evaluation. What factors play a role in the maintenance of therapeutic gains or bring about a decompensation? What are the patient's life situation and possibilities after leaving the hospital? What therapeutic or quasi-therapeutic resources are available to him?

This raises a third series of questions related to the number of LSD exposures. What criteria should be utilized to determine this? What relationship is there, if any, to psychiatric nosology? What considerations determine the timing of a second experience? How may it differ from the first? In nature? In significance? In aim? Is a change brought about in the psychotherapeutic focus as the life of the subject is altered during the course of treatment? What differences may be expected in the treatment of the Sociopathic alcoholic in contrast to the chronically-ill psychoneurotic? Both take refuge in a state psychiatric hospital as an act of desperation.

Our first step, in the first phase of our studies, was to determine the safety of this procedure as we attempted to construct the set and setting for yielding or producing maximum psychedelic reactivity. This was followed by the initiation of a systematic effort to define the factors which determine the maintenance of the therapeutic effect in the alcoholic patient. Finally, in parallel, we launched a systematic controlled study with the psychoneurotic patient admitted to Spring Grove State Hospital.

To review: Out initial research strategy was an attempt to assess the effects of one LSD experience (modal dose 40 to 500 mcg) in alcoholic patients. Preparation for the experience was such as to provide a maximum positive bias for the treatment both with regard to the ward milieu and within the patient. Prior to and during the experience itself, which is conducted in a context of maximum structure and support, there was a continuing focus on the patient's potentials for positive adjustment and on their strengthening and unfolding, rather than on his pathologies and maladjustments. Following the patient's release from the hospital, an effort was made to continue to keep informed of his progress in dealing with his previous pattern of pathological alcohol consumption.

Our studies are now entering a new phase. The first phase, consisting of an uncontrolled pilot study limited to one high-dosage session, resulted in an increased body of experience with the treatment procedure as well as an increased familiarity with problems which may be encountered in the follow-up of such patients. We are now attempting to carry out a controlled study.

In the pilot study utilizing a high-dosage, single exposure technique, a group of sixty male alcoholic patients were treated and followed. About 25 percent of these patients have maintained abstinence since release from the hospital. However, we feel that the major accomplishment of this phase was the demonstration of the relative safety of the procedure, at least, as carried out by the techniques employed in our setting. This was emphasized by data obtained via psychometric assessments, including the Minnesota Multiphasic Personality Inventory.

In the composite summary of the MMPI changes occurring in the first fifty patients on whom pre-treatment and post-treatment measure-

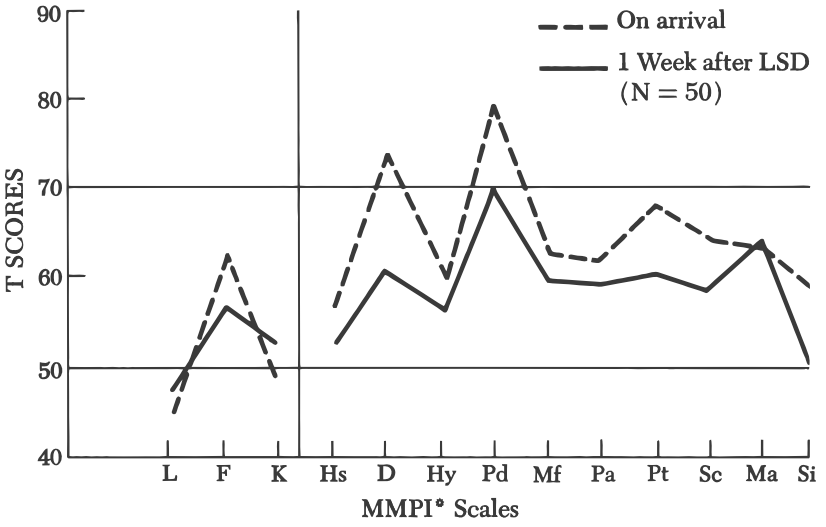

Figure 1
Minnesota Multiphasic Personality Inventory

ments were made, (see Figure 1) it should be noted that 20 percent of these patients were judged not to have achieved a psychedelic level of reactivity or transcendental experience during their one and only session. The magnitude of the changes is somewhat reduced by the averaging process. All the changes on the clinical scales, with the exception of Ma, were of a statistically significant nature. In fact, the changes on the depression scale were often of a degree and rapidity that exceeded anything observed to date in studies of antidepressant drugs. Furthermore, these data corroborated the clinical impression that none of these patients had been in any way hurt or made worse by this procedure.

The significant and dramatic development is that the patient often discovers and accepts, at least temporarily, that within himself there are value, meaning, basic worth, and goodness. This provides the leverage towards the reconstruction of his self-image in such a way that it may lead to more personally rewarding and socially productive behavior patterns. The creation and development of this attitude incorporates a considerable amount of conventional verbal psychotherapy as well as conventional LSD or psycholytic therapy of the kind exemplified by Sandison, Leuner, Whittaker, and others.

The favorable impressions from the early phases of these studies, which verified the rapid and dramatic changes in attitude and feelings reported by other investigators, led to the second phase. In conjunction with this phase, comprehensive follow-up instruments designed to evaluate psychiatric status and social adjustment in the post-hospital life situation were developed.

This phase will incorporate a control group comprising one-third of the patients to be treated. They will receive 50 mcg of LSD during the first session and during any repeat sessions deemed desirable during a six-month period. The selection of the 50 mcg dosage was predicated on the warranted assumption that it constitutes a sub-minimal (active placebo) dose, and would be unlikely to produce the psychedelic experience. The group receiving this "subminimal" dose will serve as a control group for the patients treated by the high-dosage procedure. The remaining two-thirds will receive a standard 400 mcg dosage during the first and any additional sessions they may require up to a total of three during the six-month period. All patients will be carried on convalescent leave status, and any repeat drug sessions will be reinforced by group meetings and therapeutic contacts.

It should be emphasized that the patients, the treatment team, and the follow-up team will not be informed as to which dosage was used for any given patient. All patients will be under the impression that they are undergoing the usual LSD procedure. We hope that this approach will allow us to partial out the variance, in whatever treatment success we may achieve, between conventional procedures and that specifically attributable to the high-dose LSD technique.

As this brief presentation draws to a close—I won't say conclusion, since its purpose was to suggest how our efforts have proceeded toward a controlled assessment of the usefulness of psychedelic psychotherapy in the psychiatric treatment armamentarium—we would like to reiterate our position. We definitely do not see LSD being utilized here as a medication in the usual sense. Rather, it is conceived of as an activating mechanism that brings about a unique experience lasting twelve hours or more. It is this experience upon which the therapeutic intent and structuring is focused. To work safely and effectively in this context necessitates a level of skill which cannot easily be acquired. With this in mind, we cannot help thinking of the old Chinese saying as applied to all forms of psychotherapy: "When the wrong man uses the right means, then the right means works in the wrong way." In essence, we must continue carefully to specify our approaches in order that we may ultimately determine the common denominators and make available the highest level of psychotherapeutic effectiveness and replicability in all settings.

DISCUSSION

Dr. Kurland: I would like you to note the chart designated Figure 1. It indicates the changes observed on the MMPI. The MMPI data were obtained prior to treatment and five days after the LSD treatment on fifty alcoholic patients who served as their own controls. Upon examining the MMPI profiles, one notes almost immediately the marked changes on the depression scale. This drop on the depression

scale becomes even more dramatic when compared with the period of time which the antidepressant drugs require to bring about a similar amelioration of depressive symptoms. The other changes are also significant, but are not as dramatic as those observed on the depression scale. As a result of these observations the question arises as to how long such changes can be sustained. Furthermore, despite the dramatic changes observed and the remission achieved, none of these patients is considered "cured." The patients rather are seen as leaving the hospital hopefully with a "new beginning." Many are destined to decompensate in a relatively short time. However, should a patient return for additional help, the previous experience may aid in bringing about a quicker remission.

Dr. Mogar: Would Dr. Kurland tell us something about the characteristics of his sample?—for example, the average number of years of chronic drinking, the number of hospitalizations, the age range, and so on? I ask because the MMPI indicates this to be a not particularly sick group.

Dr. Kurland: The group is typical of the type of alcoholic admitted to the state psychiatric hospital. The great majority has a long history of alcoholism. Their characteristics have been described in many of our publications in connection with comparisons of the drug treatments with antidepressant and anti-anxiety agents.

Dr. Unger: Many of these alcoholic patients show severe psychopathology of practically every type. The average age is in the early forties. There is a considerable range in the number of previous hospitalizations. The prognosis of this group is generally considered to be rather poor. Incidentally, approximately 25 percent of the sixty patients have maintained abstinence for a minimum of six months following intensive brief therapy which included the single LSD session, or psychedelic psychotherapy. There should be no generalization from this figure to the full spectrum of patients in the Alcoholic Rehabilitation Unit. This was a specially selected and motivated group.

Dr. Dahlberg: I am interested in the antidepressant effect, and I wonder if it hasn't been compared in other ways about which something can be said. You pointed out the rapidity of the LSD effect and, of course, compared it with many of the antidepressant drugs which, by comparison, act slowly. My own experience with LSD is still limited, but I do have the impression that the change which results from the LSD experience seems to have little or nothing to do with the material that comes out of the abreaction. This raises the question as to the importance of the experience versus, perhaps, the pharmacological effect.

Dr. Unger: Actually, contrary to many published opinions, we feel that the depression observed in the alcoholic patient is a strong indication for treatment with psychedelic psychotherapy. Let me make it clear that it is not that this compound is more effective than other antidepressant drags. I think that gives a very incorrect impression. The resolution or reversal of the dysphoric state is a function of an intervening

psychedelic reaction such as Dr. Pahnke has described. If we do not achieve the psychedelic reaction, we do not see this effect. It should be emphasized furthermore that we have been attempting to develop procedures of preparation and session programming which facilitate psychedelic reactions. We have reached a point where about 80 percent of our patients in a first exposure achieve a psychedelic level of reactivity with the characteristics described by Dr. Pahnke.

Dr. Kramer: Along Dr. Dahlberg's lines, I wondered if we couldn't perhaps attempt to formulate what is taking place from a theoretical point of view. If the unconscious material of a patient is largely due to the inhibited or repressed impulses, and it is the psychedelic experience or the abreaction that brings about its release, it would certainly seem that the antidepressant effect must be correlated in some way with this abreactive agent. From the way I interpret this, and especially from the comment of Dr. Unger, that it is the psychedelic experience and not the LSD pharmacology per se which produces the antidepressant effect, I would like to have some further comment.

Dr. Fremont-Smith: Would you comment on this, Dr. Unger? Then we would like to have a final statement from Dr. Kurland.

Dr. Unger: Let me make it clear that psychedelic reactions are not abreactive in any sense in which that term is generally used. We routinely encounter abreactive episodes in an LSD session, and often they are psychodynamically significant and resolving. But psychedelic reactions are a different breed of fish. They are extraordinary occurrences, or at least they were before the development of techniques which make it possible to repeat them fairly reliably. Characteristically, episodes of psychedelic reactivity incorporate a core of overwhelmingly positive affective content. Perhaps I had best illustrate concretely. All our patients write retrospective reports of their sessions. Let me read an excerpt or two. We have literally dozens of similar accounts.

> A tremendous feeling of exaltation came over me. It kept growing in intensity. I felt rapture and ecstasy. Each moment I thought I had reached the zenith of rapture and joy; then the intensity and ecstasy would increase. It was overwhelming! There are no words to describe my feelings. Then, while I was in this state, I found myself on top of the highest mountain in the world. All was still and quiet. A sense of cleanliness and purity swept over me. I was alone and at peace. Then, in a very dramatic fashion, God reached me. I heard no words, but I knew that God was there. All was holy and pure. I felt humble and insignificant. I was completely awed! It was the greatest, the most magnificent experience of my entire life. I can't put my feelings into words, but I knew (and still know) that I had been reached. My problems seemed like nothing. I realized that I was merely an insignificant speck in the universe. I knew then that life has meaning and riches and rewards. I felt as though I had been reborn. No experience has ever been more satisfying. Probably never again will I undergo such an experience. But I don't care—once in a

lifetime is more than any mortal can hope for. I have had my moment of truth and glory. (Patient 15)

Episodes of this kind occupy perhaps only a few minutes of a twelve-hour session, and the road to their attainment may have been arduous. They are definitely not "automatic" or in any simple sense a direct function or consequence of administering LSD. Let me read another excerpt or two.

A bright, white light appeared before me and grew bigger and bigger. My feelings were of triumph and joy. The great white light took on the form of a beautiful lily and each petal stretched out to me. Suddenly the lily swept away and I found myself in the very presence of Jesus. I was in awe, humble, and very much in love. Here, there are no words to describe the beauty, nor my deep, deep feelings. They will remain with me the rest of my life. (Patient 44)

I felt myself being elevated higher and ever nearer to pure white light whose source seemed encased in translucent, illumined crystals. Each moment the light was revealed in more glory until ultimately there was an explosion of beauty, light, and unity. This indescribable beauty and harmony that I beheld so struck me with awe that I could only utter silently, "Hail God! Hail God! Hail God!" I was enthralled with the immanence of God in all creation and with the harmony and symmetry of all nature. (Patient 49)

I hope this helps to make the point that psychedelic reactions are unusually profound and dramatic. We conceive the therapeutic task to revolve on "harnessing" such experiences in order to effect changes in the patient's concept of himself and his relationship to the world. It is in these areas that we aim toward radical reconstruction. The chronic alcoholic patient category is, of course, an extremely refractory one. While the conception seems promising to us, we will not be able to tell more until we see the results of the treatment program which has now been launched. It will cover a six-month period of therapy and include more than one LSD session. With such a program, we are more hopeful of consolidating, and in a stable way in a greater percentage of patients, a productive level of psychological and social functioning.

Dr. *Fremont-Smith:* Dr. Kurland, will you close?

Dr. Kurland: I'd like to point out how serious depression is in the alcoholic. A recent follow-up study on a large group of alcoholic patients carried out by our Research Department indicated that the life expectancy in this group is ten years less than the average life expectancy of the general population. This group of patients over a ten-year period had a suicide rate of approximately 10 percent.

Our attempts to initiate a controlled study encountered the need to carry out a great deal of preliminary work. This work takes in structuring the approaches and a therapeutic strategy, the development of a positively-oriented milieu toward the LSD studies, our

own training and that of our therapists to be able to work with LSD almost as with a surgical instrument. We now have extensive experience with the difficulties in carrying out such research and with the detailed preparation which must go into such an approach before such experimentation can be meaningful. Finally, another important point was the possibility of bringing together experienced workers in this area, such as Dr. Savage and Dr. Unger, who are now participating in the investigative program and helping to meet the logistical demands of such studies. We hope shortly to have available a facility where we can study such patients by remote control, namely, by closed-circuit television, and to carry out studies of the techniques utilized by LSD therapists. These studies will provide an opportunity to develop a definitive technique which could be replicated by any serious student. To share our experiences, we also extend an invitation to the members of this group to visit us.

Brief Psychotherapy, LSD and the Alcoholic

P. Oliver O'Reilly, M.D.*

Over the past few years considerable controversy had been raised both in Canada and the United States over the use of LSD as a therapeutic tool in psychiatry. To quote from an editorial by Dr. Grinker: "LSD has been used as an adjunct to psychotherapy, presumably loosening defenses and facilitating insight. The effective release interested many psychiatrists who administered the drug to themselves; some, who became quite enamored with the mystical hallucinatory state, eventually in their mystique, became disqualified as competent investigators. Lay people bootlegged the drug for its pleasurable effect and a few writers published stories and books on the subject for the public. Motion picture actors extolled its benefits and television psychiatrists enacted its curative power. Now the deleterious effects are becoming more obvious; latent psychotics are disintegrating under the influence of even single doses. Long continued LSD experiences are subtly creating a psychopathology. Psychic addiction is being developed and the lay public is looking for psychiatrists who specialize in its administration. Here again is the story of evil results from ill-advised use of a potentially valuable drug due to unjustified claim, indiscriminate and premature publicity and lack of proper professional controls." (1.)

Keeping in mind the above statement by Dr. Grinker, I feel that the purpose of this symposium should be to investigate, as scientifically as possible, the place that LSD therapy has in our therapeutic armamentarium. Careful, long-term studies are necessary before one can reach proper conclusions in this matter. My prime interest in the use of lysergic acid has been in the treatment of alcoholism. In Saskatchewan, the first studies in this area were done by Colin Smith who treated 24 refractory alcoholics with an improvement in 12 cases. McLean, (2) and others, reported on the treatment of 61 alcoholics and 39 patients with other psychiatric disabilities. A follow-up period ranging from 3 to 18 months showed that 30 of the alcoholics and 22 of the other psychiatric patients were much improved. While admitting that these results were quite encouraging in the relationship to alcoholics, I must confess that I was quite

* Director, Psychiatric Department, Union Hospital, Moose Jaw, Saskatchewan.

skeptical about the use of LSD as perusal of the literature seemed to indicate that most of the work done was on a subjective level and not too many adequate scientific studies had been carried out. However, it was felt that an investigation of LSD was warranted and that I would be in a more advantageous position to carry out the investigation of this therapeutic tool (3, 4) since I had never taken the drug myself.

METHOD

The method used was based on two factors: (a) It appears that the chief value of LSD lies in its use as an abreactive drug. It was noted that there was a marked capacity to cause unconscious material to merge into consciousness. As far as the study was concerned, other phenomena such as hallucinatory experiences, distortion of body image, etc., were effects not particularly investigated in relation to therapy. LSD as an abreactive drug appears to be unique in that it produces great vividness and feelings of reality which bring past experiences into consciousness. Throughout the session the patient is conscious and able to remember with great clarity everything that occurred while under the drug. It allows the individual to interact spontaneously in what may be called a structured environment. (b) The second principle involved in this therapeutic regime is that of a corrective emotional experience. The basic philosophy involved is to re-expose the patient, under more favorable circumstances, to an emotional situation which he could not handle in the past.

With the above two principles in mind then, the therapeutic team includes the patient, his nurse and the therapist. The LSD session becomes a form of group therapy. The transference situation is greatly enhanced by the LSD and causes the patient to regress to significant periods in his early life. Therefore, it is desirable to provide father and mother surrogates during the treatment. The general therapeutic atmosphere should be one of acceptance of the patient as a person in a non-critical supportive treatment situation. A prolonged interview along psychodynamic principles is carried out at the height of the experience, about two hours after injection. The subject is encouraged to study his problem areas and led to ventilate particularly traumatic situations which occurred in his early life. It is hoped that under LSD a corrective emotional experience will be obtained and that a reconstruction of the personality of the patient will occur leading to more mature ways of dealing with his anxiety. Much importance is attached to dealing with the re-experienced repressed traumatic memories in relation to the patient's present difficulties.

In view of the significance of the transference reaction, the procedure on admission to the psychiatric department was to assign a special nurse to each case. Her duty was to establish rapport with the patient, to explain and discuss all aspects of the LSD treatment, to carry the patient through the LSD experience, and to act as a mother-surrogate. Steps were taken to build up a good relationship between the admitting psychiatrist and the patient. For instance, a complete anamnesis of the patient's life history was

carried out and several preparatory sessions occurred between the therapist and the patient prior to the session. In each case the psychodynamic factors involved were elicited and used as ground work for the therapeutic session. During the days preceding the treatment procedure, the patient participated in the milieu therapy and all other activities of the ward.

METHOD OF TREATMENT

All of the patients were chronic alcoholics who had not responded to previous psychiatric treatment. Patients with an underlying psychosis were eliminated from the treatment procedure. It was decided that patients would have just one therapeutic session with LSD with a follow-up to evaluate, if possible, the effects. The routine was standardized as follows: The patient was usually admitted on a Monday morning. Upon admission, he was introduced to the nurse who would stay with him until the program was concluded. On the morning of the sixth day after admission, the LSD was administered in a typical dose of 200 mcg. Environment was considered quite important and single rooms were designated as treatment rooms. Tastefully furnished, they contained visual stimuli such as paintings and cut flowers to produce and enhance perception. Auditory stimuli, consisting mainly of music, was supplied by a record player. The patient was encouraged to relax and listen to the music which was usually classical or semi-classical. He was given his choice of music and encouraged to go through a good part of the experience lying down.

The patient received 200 mcg around 8:30 a. m. at which time the initial discussion occurred between the therapist and the patient. A prolonged interview was conducted at the height of the experience, about two hours after the injection. The patient was never left alone; his special nurse remained with him throughout the treatment period. If the patient needed further LSD in order to induce a psychedelic experience, 100 mcg was given. When the therapist decided that an adequate experience and abreaction had occurred, the session was terminated with 100 mg of niacin intravenously, and one gram orally. At 9:00 P. M. on the night of the experience, the patient was given 6 grains tuinal orally to ensure a good night's sleep. The subject was asked to write an account of his experience on the day following the treatment and was interviewed by the attending psychiatrist for another abreactive session. If the patient was over his experience, he was discharged on the second day following this session. The appendix lists the instructions given the patient and the nurse.

DESCRIPTION OF THE SUBJECTS

From December, 1959, to August, 1962, 68 alcoholics were treated. Approximately 60 percent of these had been drinking for more than ten years, and only 6 percent had had uncontrolled drinking for less than six years. Only those patients who showed no evidence of psychosis and who voluntarily accepted treatment were selected. Their psychiatric diagnosis

showed the following distribution: Chronic Alcoholism—62 percent; Acute Alcoholism—16 percent; Alcoholic Psychosis—4 percent; Personality Disorder—13 percent. Twenty-six of the patients were originally referred by the Bureau of Alcoholism; the remaining 42 came from private physicians.

The patients ranged in age from 20 to 62 with a mean of 37 years. There were eight females in the group. Over three-fourths of the patients were married. More than two-thirds had completed at least one year of high school. Approximately one-half of the group had previously had some form of psychiatric treatment, including 15 who had had one or more previous LSD experiences.

FOLLOW-UP METHOD

Three sources of follow-up information were used: a questionnaire completed by the patient; a questionnaire completed by a close friend or relative; data from other agencies or sources, such as the patient's physician and the Bureau of Alcoholism.

The questionnaires were designed to cover sample periods of time in the life of the patient. The one year prior to LSD treatment was taken as an index of the severity of the drinking problem. The two month period following treatment was selected to show the response immediately following LSD. The last two months of the follow-up period were sampled to show the most recent trends. Only patients who showed total abstinence in the last two months of follow-up were classified as abstainers, if this information was not contradicted by data from any other source. Those cases who had received more than one LSD treatment were studied on the basis of their most recent one.

OTHER DATA

Information concerning the patient's personal history and such factors as age, diagnosis, etc., was obtained from the psychiatric history taken at the time of treatment. Data on the treatment process itself and on the nature of the experience were taken from nursing notes, psychiatrists' notes and from the patient's own description of his experience. The .01 level of significance was used for all statistical procedures.

RESULTS

At the time of the follow-up survey, a range of two to thirty-four months had elapsed since treatment, with a mean of fourteen months.

up to 6 months	18% of patients
between 7-12 months	31% of patients
between 13-18 months	19% of patients
between 19-24 months	23% of patients
between 25-34 months	9% of patients

Complete information was available on all but seven patients. Sixty percent of the patients returned the questionnaires. Data from other sources were obtained on three-fourths of the group. More than one source of information was available for two-thirds of the group. This provided for some means of checking the reliability of the data. Significant correlations were obtained between these sources with respect to abstinence versus non-abstinence.

Twenty-six patients, or 38 percent of the total group, were found to be abstaining from alcohol in the two months preceding follow-up, four of whom had had one or more previous LSD experiences. The remaining 42 patients were classed as nonabstainers whether or not they showed some improvement. There was no significant change in abstinence or indulgence between the two periods selected for follow-up study. This suggests that improvement established immediately following the treatment tends to be maintained.

No factors outside the treatment process were found to correlate with abstinence. Such variables as age, marital status, educational level, membership in A.A. or church groups, were not significantly related. The number of previous psychiatric treatments, the number of years of uncontrolled drinking, the psychiatric diagnosis, all showed no significant relationship to abstinence. Eight different psychiatrists administered the treatment during the three-year program but none showed significantly better results than others.

Only one factor was found to correlate significantly with abstinence, at the .01 level of probability. Patients described as experiencing depression and/or claiming a transcendental experience, without signs of physical distress or of post-treatment disturbance, showed greater abstinence in the follow-up periods. Applying this criterion to all patients, it identified 46 percent of the abstainers and only 6 percent of the non-abstainers.

Sociological variables were not included in the follow-up study. There was evidence in several cases that LSD therapy ranked high in status over other treatments for alcoholism. The social meaning or significance of medical-psychological treatment may be an important factor to consider in interpreting "success" rates. It was not within the scope of this study to assess the social desirability of LSD treatment. Nevertheless, only two patients of those who returned the questionnaire indicated that, given free choice, they would not receive LSD again.

DISCUSSION

These studies have shown and indicate that LSD plus brief psychotherapy is of considerable benefit in the treatment of chronic alcoholics. It should be pointed out that it is not the drugs that are therapeutic but the experience the patient has that is of benefit. There is no doubt that the psychedelic effect is quite dependent on the therapeutic setting, the pa-

tient's personality as well as the preparation, the surroundings, and the orientation and personality of the therapists involved. The findings also suggest that the nature of the LSD experience independently correlates with future abstinence. It was found that the patients experiencing depression and/or claiming transcendental experience without signs of physical stress or post-traumatic disturbance showed best results. Gellhorn (5) has postulated that in view of the close relationship between mood and hypothalamic activity and the role of the hypothalamus in perception, one would be inclined to speculate that hypothalamic functions and hypothalamic cortical discharges are altered in the administration of LSD. He is of the belief that the psyche and the autonomic phenomena are two different manifestations of the same neural and humoral events. While this may be so, I would like to point out that the depression described as occurring in this series was a result of the patient's psychological conflicts. Most of the cases treated in this series were pathological personalities with defective super-ego formation; the fact that they became depressed while abreacting their past life seemed to indicate that one of the things happening was super-ego identification with the therapist with a strengthening of super-ego formation. There is no doubt that with the experience the patient develops insight and clearness as to his problems. It also helps him to find a new meaning and perhaps a more realistic way of life. In relationship to transcendental experience this factor seems to suggest that in many of the successful cases, the loss of previous defensive meanings or perceptions of one's self has occurred.

The lack of physical symptoms in improved cases appears to support Blewett and Chwelos' contention that physical symptoms represent an attempt to ward off the experience and that a successful experience enables one to integrate the perceptions without this defense. Post-treatment reactions, such as confusion or depression, may indicate a threat the experience has had for the individual and lead to an inability to integrate the newness in experience and perception that LSD provides. The one aspect of the experience which appears to play quite a significant role is that of the profound alteration in perception. This involves loss of reality and depersonalization. However, with the aid of the therapist, this situation is therapeutically managed. Anxiety, engendered by this experience, is controlled by the therapist. It helps deepen the transference relationship between the patient and therapist and has a marked cathartic effect. It is felt that the control, direction and utilization of the anxiety created in the LSD situation is an essential part of the therapy.

Some workers, such as Blewett and Chwelos, have experimented with the therapist taking the drug with the patient. This they believe increases the empathetic bond between patient and therapist. We tested this hypothesis in the following way: two psychiatrists, one with two previous LSD experiences, were given 200 mcg of LSD together. The therapeutic team consisted of three observers: two psychiatrists and one psychologist. The psychiatrist who had had the LSD before, had a pleasurable experience, and the other psychiatrist taking the drug for the first time, had an extremely unpleasant one. During the six hours that both were

under the influence of the drug, neither had any idea of how the other felt. A complete block seemed to exist between them; both were communicating their feelings to the observers. At one stage, the psychiatrist having the bad experience became quite upset over his feelings but this did not appear to register with the other psychiatrist. On the basis of this experiment, we felt that (a) it was of no benefit to the patient for the therapist to take the drug with him, and (b) if anything, it produced perhaps increased anxiety in the patient because it was quite obvious from this experiment that the therapist was so involved in controlling his own feeling during the experience that he was unable to establish a bond of empathy with his patient. It is felt that under these circumstances, most of the therapeutic effects of the drug and the experience are completely lost. It should be pointed out that in this study the patients had just the one experience; no follow-up therapy or relationship therapy was given and the results are based on the one overwhelming experience.

It is surprising that such a profound psychological experience rarely leaves adverse residuals. It has been our experience that out of 68 patients only one developed psychotic symptoms requiring hospitalization. This was a paranoid reaction and there was no evidence of a relationship between his symptoms and his LSD experience. However, we did have three cases sent to us of depression following LSD experiences which had been given in other units. These depressions were of the psychotic variety and necessitated in-patient and electro-convulsive therapy in order to alleviate their condition.

SUMMARY

This paper has dealt with results obtained in chronic alcoholics utilizing LSD as an abreactive drug, total push therapy in terms of milieu therapy, brief psychotherapy with the psychiatrist, and relationship therapy with the nurse. The program consisted of just one week's therapy with an LSD experience with no follow-up therapy given to the patient following the treatment. The results of the program were later evaluated. This technique has shown that a single LSD experience has produced sobriety in 26 patients without any disastrous side effects. The nature of the experience appeared to bear an independent relationship to abstinence. Those patients having depression or transcendental experience did best. It is emphasized that the treatment should be carried out in a controlled situation with a fully qualified psychiatrist well trained in the use of hallucinogenic drugs. In this series only one case, which may or may not have been associated with the experience, resulted in a paranoidal reaction. However, we did receive three patients for treatment of depression from another center where they had received LSD.

The results indicate that LSD has a role to play in the treatment of chronic alcoholics.

Process and Outcome Variables in Psychedelic (LSD) Therapy

Charles Savage, M.D.*

James Fadiman, M.A.*

Robert Mogar, PH.D.*

Mary Hughes Allen, M.D.*

Over half a century of work with the psychedelics has not established general acceptance of their usefulness in psychiatric therapy. On the contrary, a sensational controversy has been precipitated by their advocates and opponents. This controversy has been fueled by the tendency on both sides to employ polemic rather than data, perhaps because the data have not been convincing. Nearly all studies have serious shortcomings, as exemplified in the following report: "Le cas peut-être le plus remarquable que nous avons observé à ce point de vue est celui d' une malade internée pour depression mélancolique avec sensations de dépersonalization, qui a recuperé sa personalité et les impressions corporalles au cours de la mescalinisation. Elle est sortie guèrie quelques jours après." (6) (Perhaps the most remarkable case we have observed from this point of view is that of a sick woman, hospitalized for melancholia with feelings of depersonalization, who recovered her personality and her bodily sensations during the course of mescalinization. She left cured some days later.)

These shortcomings include: 1. anecdotal evidence; 2. inadequate assessment procedures; 3. insufficient follow-up; 4. naive statistical treatment; 5. lack of controls. Many of these strictures apply to studies of psychotherapy, and the studies of the psychedelics share many problems in methodology with studies of psychotherapy. Most early studies relied solely on the unsubstantiated opinion of the therapist or on the consensus of patient and therapist. It sometimes happens though that a patient, who is developing a psychotic reaction, may proclaim himself to be much better, and the therapist, entering a *folie à deux* configuration with the patient, agrees with this evaluation. In less extreme cases the therapist may see improvement, because the patient has come to share the therapist's value-belief system. In other instances, the improvement may be merely wishful thinking.

* International Foundation for Advanced Study, Menlo Park, Calif.

Though we cannot entirely disregard the patient-therapist consensus, we look for other confirming data. However, the all-too-easy answer of the independent observer is relatively useless in an area where opinion is so polarized, for he will merely inflict his prejudices on the data. We have noticed this in other controversial treatments as, for example, shock, where the dynamically oriented therapist, far from being convinced by evidence that the patient is better, has in fact become outraged by it and consoles himself with the thought that the patient has suffered irreparable brain damage. Oremland, (20) reporting on the same patients considered improved by Savage, Terrill, and Jackson, (26) felt that they were not improved, that LSD had caused regression, counterphobic defenses, increased fantasy and failure to work through. The problem is further complicated by the fact that transient mood swings may simulate genuine improvement or recovery. Thus the follow-up period must be sufficiently extended to avoid this potential source of evaluator error.

Despite the shortcomings in data collection, there has been accumulating evidence which supports the use of psychedelics as a therapeutic procedure. (28) (30) They describe two essentially different ways of using these drugs: 1. as an aid to psychotherapy with the production of insight, recall, reliving, and abreaction; 2. to produce a peak experience with a single high dose of LSD. Whatever the relative merits of the two uses may be, the second has many methodological advantages in that the process variables may be reduced to three, preparation, the psychedelic experience, and follow-up. On the basis of preliminary work with normal controls and patients, a method of inducing a psychedelic experience was developed which keeps the process constant, (23) (25 (29) along with suitable methods of assessment.

Population: The sample included all patients who completed the psychedelic therapy program between July, 1962 and April, 1963. It consisted of 77 persons, 47 males and 30 females, with a mean age of 35.5 (SD = 7.5), and a median educational level of two years of college. Two-thirds of the total sample resembled the typical case load of an out-patient psychiatric clinic. One-third seemed relatively normal in terms of defense structure and superficial adjustment to life, but complained of lack of purpose, lack of meaning in life, or a sense of lack of fulfillment. For want of a better category we called them "normal-depressives." Excluded from the study were those with overt psychotic process, severe depression, cardiovascular disease, or paranoid reactions. People with unsettled life circumstances (for example, a pending divorce) or poor motivation were also excluded. The exclusion rate was fairly high; 40 percent were either turned down initially or before they had taken LSD. With few exceptions, members of the group paid the medical costs of the treatment, which is a reasonable index of motivation.

Treatment: Each patient had an intake interview, psychiatric and psychological screening, and testing. If accepted, he was asked to prepare a detailed autobiography according to a prescribed form. He was interviewed weekly for from four to eight weeks to discuss the events of his life

as revealed in the autobiography and to discuss his expectations of treatment. The interviews were non-interpretive. Often ten mg of methamphetamine were given before the beginning of the hour. Toward the end of the hour the patient was given inhalations of 70 percent oxygen and 30 percent CO_2 according to Meduna's method. (17) Sufficient inhalations were given to cause transient dissociation without loss of consciousness. This accustomed the patient to the regressive loss of ego boundaries which he would experience during LSD. Finding from his experience with CO_2-O_2 that regression is a safe experience, he developed trust and confidence in the procedure. Sometimes abreaction and reduction of tension occurred. The patient disturbed by this momentary suspension of ego controls was usually dropped from the program.

The psychedelic session lasted an entire day. The patient received 200-300 mcg of LSD with 200-300 mg of mescaline sulfate one hour later if necessary. Pupillary dilatation (4-5 mm) was used as an index of an adequate dose. The patient spent the day in the company of a male and female therapist (one medical and one nonmedical person), who provided companionship but not interpretation. The day was spent listening to music or viewing various visual stimuli, e.g., family photographs. The patient remained under twenty-four hour supervision. He was seen in follow-up interviews at one day, one week, and two, eight, twelve, and twenty-four weeks. The final evaluation on the first 77 patients was conducted at six months. It was extended to one year on a later series of 110 patients.

The patient and therapist shared the expectation that he would have an experience in which he would learn something about himself which might prove useful to him and permit him to alter his life in a more self-fulfilling direction.

It may be noted that a more flexible arrangement might permit a larger percentage to be treated. The rigid schedule outlined above effectively limits the process variables to what the patient himself brings to the therapeutic situation.

ASSESSMENT PROCEDURES

The assessment procedures were threefold: psychological tests, independent behavior change interviews, and clinical evaluations. The tests consisted of the Minnesota Multiphasic Personality Inventory (MMPI), the Interpersonal Check List (ICL), (13) and the Value-Belief Q-Sort. The MMPI was chosen because it is well constructed, empirically derived, and extensively validated. It provides indices not only of symptomatic improvement but also of changes in the formal personality structure. It was given on admission into the program, two months after LSD, and six months after. The ICL was chosen as a simple method of testing the common claim that LSD leads to increased ability to love and to greater self-assertion in interpersonal relations. It was given at the same time as the MMPI. The Value-Belief Q-Sort consists of 100 items assembled from the California F scale, the Rokeach dogmatism scale, and statements in sub-

jects' post-LSD reports (independent of the present sample). These items were assumed to reflect typical values and beliefs, and to indicate the kinds of changes which tend to occur following an effective psychedelic session. Normative and reliability data, results of item analyses and subscale descriptions will be reported elsewhere. (10)

Tests were given at the time of acceptance into the program, two days after LSD, and two months after LSD. The hypothesis was formed that a successful psychedelic session would be followed by an immediate and persistent change in values in the direction of open-mindedness, and that this in turn would be followed by changes in behavior which might be considered more ego-syntonic. These changes were to be assessed by interviewers who were independent in the sense that they had nothing to do with the treatment and were not employed by the Foundation, and by clinical evaluations.

Clinical evaluation: This was done on the scale developed by Carson. (4) The scale has six items; two are rated on a nine-point scale. They are "degree of satisfaction of the patient with the outcome of therapy," and "your rating of the outcome of therapy." Three other items were rated on a five-point scale, occupational adjustment, adequacy of interpersonal relations, and symptomatic status. A final score, called the "overall success" index, was the sum of the above five items. Two sets of ratings were obtained, one from the therapist at three months (the last official therapeutic contact), and at six months by the independent evaluator (see below).

After the independent evaluation was finished, the entire staff was asked to give a global rating of the treatment on the basis of all available data. This was on a five-point scale, the five points corresponding to worse, unimproved, minimal, moderate, and extensive improvement. The ratings were consensual. When there was disagreement, the lowest rating prevailed.

The independent evaluation was carried out by two graduate students in psychology with considerable clinical experience and experience in interviewing. A certain positive bias must be inferred from the fact that they were willing to work gratis. Yet since one of them had not had LSD for fourteen years, whatever enthusiasm was generated by the drug would seem to have been safely metabolized.

A degree of protection against the halo effect of patient and interviewer was provided by the behavior change interview schedule which permits questions. Each question is so stated as to be answered in one of three ways: "with greater frequency than before beginning psychedelic therapy (more); "with less frequency than before beginning psychedelic therapy (less); "with the same frequency as before beginning psychedelic therapy (same). If the behavior did not appear at all either before or after, it was scored "same." Subjects were instructed that the interviewer was not interested in their opinion as to whether a given behavior was better or worse, but only in the change in frequency.

This schedule entitled the Behavior Change Interview (BCI), (7)

consists of 433 questions about behavior change. It was postulated that while subjective accounts of improvement were suspect, one could place a certain confidence in subjective reports of whether the patient dreamt more or had more frequent orgasms. Interviews with families or friends tended to confirm this notion.

Although constructed with the expectation that it could be given in two hours, in point of fact it usually lasted three to four hours. It was given six to nine months after LSD. It was customarily given at the office, but if patients resisted this, they were interviewed at the home. The 433 questions were subdivided into 19 subscales, each encompassing a different facet of behavior. Two scorings were employed, one an arbitrary pre-assigned arithmetical summation, the other a clinical evaluation by the rater. In practice, there was no significant difference in arriving at an estimate of clinical improvement.

Results of psychological tests: Sixty of the sample of seventy completed the testing program. Clinical data show that the other ten were probably not significantly different from the rest of the sample, only more refractory to testing.

1. The Value-Belief Q-Sort. With regard to the present sample, a consistent and reliable change in values and beliefs was found in the total group which cut across such variables as age, sex, religious orientation and personality type. Three days following the LSD session, all subgroups revealed a significant increase in the extent to which they endorsed test items reflecting a deep sense of meaning and purpose in life, open-mindedness, and a sense of unity or oneness with nature and humanity. Lower value was assigned to material gain and possessiveness, dogmatic beliefs, and social status. Also significant was the finding that these changes in personal beliefs either remained constant or were further increased at the two-month follow-up testing. These results support the hypothesis that a rapid and extensive change in values does tend to occur in most subjects and is maintained over a period of time.

2. The MMPI. Detailed analyses of the MMPI results have been described in a previous publication (19) and will only be briefly summarized here and interpreted in the context of the total study. There were substantial and spectacular personality changes reflected at two months which compared most favorably with traditional longer-term therapy. The nature, extent, and stability of the changes varied considerably as reflected in the six-months testing. By this time a leveling-off has occurred; patients have come to terms with their rapidly altered self-world image. For six months, habitual patterns of response to situations had been scrutinized and repeatedly challenged. Dissonance between thought, feeling, and action had been generally reconciled and a higher level of integration had been achieved. However, individuals varied considerably in their capacity to translate profound insights into attitudes, feelings, and conduct. At six months some individuals maintained and consolidated the gains demonstrated at two months. Others displayed further personal growth which was still in progress. Still others showed a tendency to re-

gress from the level of improvement and personal effectiveness indicated at two months. In these subjects either the pull of well-entrenched maladaptive defenses and/or uncongenial life environment undermined the favorable personality alterations displayed at two months. In some instances the regression was complete, in others the characterologic changes evaporated while the sense of well-being and improvement persisted.

Analysis of the MMPI profiles shows that patients may readily be broken down into a number of subtypes (diagnostic categories). (19) These have proven useful in explaining the differential results noted above. For example, those with a psychotic profile (three peaks over 70) or a borderline profile (highest peak on Sc) showed significant changes in character at two months which tended to dissipate at six months. However, they maintained an elevation in mood and a sense of well-being. Their dystonic defensive structure was restored, but they had less depression, anxiety, guilt. It would appear that they had insufficient ego resources to capitalize on the significant characterologic changes noted at two months. One would conclude that additional therapy is required to supplement personal resources which are inadequate to instrument newly-acquired insights.

There is another and quite different group of patients who showed a similar pattern of change over time with respect to mood and character, the hysterical personality (Pd-Mf greater than 19 standard points). This group was characterized clinically by passive-dependency, lack of a sense of personal responsibility, and poor reality testing, all of which contributed to their inability to integrate the LSD experience into their self-system and life circumstances. This group tended to retain some degree of magical or unrealistic expectations with regard to outcome. They sat back passively and waited for the drug to transform them. They basked in the greatly expanded sense of well-being and took no steps to translate their insights into living reality. Like the borderline psychotics, this group did display pervasive personality changes at two months, and despite the regression, did retain some degree of improvement. Conceivably, a longer period of preparation might lead to more realistic expectations. Another alternative might be to repeat the psychedelic experience after six months.

Each of the other subtypes or diagnostic categories demonstrated stable, positive changes throughout the follow-up period. These included subjects characterized by cyclothymic impulsive trends, anxiety and tension states, obsessive-compulsive symptoms, reactive depressions and passive-aggressive tendencies. Patients in these groups tended to display less spectacular shifts in mood shortly after LSD, but continued to show positive changes in character structure at the six-month follow-up. Recently inaugurated follow-ups at one year after the LSD experience indicate that these groups not only sustain improvement but continue to realize potentialities discovered under LSD.

With regard to the nature of changes characterizing different personality types, shifts tended to occur consistent with the symptoms and defense patterns of a given group. Thus, anxiety neurotics are less anxious,

compulsive and withdrawn, while close object relations are more gratifying. In contrast, impulsive hyperactive subjects led a more orderly, less hectic existence and displayed greater impulse control.

3. Interpersonal check list (ICL). The implications of these findings with the MMPI were further substantiated by changes which occurred in ICL performance. With regard to Dominance and Love scores, the results are similar for the total sample, male and female. In each case, significant increases in self-assertiveness and confidence in interpersonal relations were indicated at two months and maintained at six months. These results parallel the MMPI findings. On the other hand, almost all the major subgroups showed no significant change on the Love scale at either two or six months. An exception was the Psychotic (3 scores above 70 on MMPI) group which demonstrated a significant increase in Love at two months. This increase vanishes at six months, again paralleling the MMPI findings. Since all other subgroups were above the normal population mean on the Love scale both before and after treatment, the failure to find a post-LSD increase was not remarkable. It is our hypothesis that these groups had the capacity for loving, but lacked the self-assertiveness and confidence to express their feelings of love and translate them into action. This would account for the clinical reports of greater capacity for love.

CLINICAL EVALUATIONS

The clinical evaluations which complemented and crossvalidated the conclusions from the extensive psychological inventories were threefold:

1. The Carson rating by the therapist and by an evaluator who had nothing to do with the treatment and who interviewed the patient six months after LSD; 2. The Global staff rating made by the entire staff on the basis of all available data; 3. The behavior change schedule conducted at six months (in the case of elusive patients, nine months).

The question raised by all these different ratings was to what extent would different raters, seeing the same people in different roles and for significantly different spans of time, rate the same areas of functioning? It was hypothesised that there would be considerable agreement between the ratings, but that the different situations would elicit different aspects of the underlying personality. Table 1 supports this hypothesis.

TABLE 1

Intercorrelations between Therapist and Interviewer Ratings on Carson Outcome Items

	r		
Patient satisfaction	.60	p	< .01
Rating of outcome	.61	p	< .01
Occupational adjustment	.41	p	< .01
Interpersonal relations	.31	p	< .02
Symptomatic evaluation	.47	p	< .01
Overall "success" index	.64	p	< .01

Pearsoner's for the Intercorrelations among the five items ranged from .22 to .86, the average value for the therapist's ratings being .51, and for the interviewer .49. There was a substantial positive correlation on every subscale between the two raters.

Global Staff Ratings

Global staff ratings were available on 74 of the 77 patients in this subsample, six months after their LSD session. They were marked improvement 12, moderate improvement 22, minimal improvement 28, no change 13, worse 1. Details of the global staff rating are reported elsewhere. (22) (23)

As would be expected, the correlations of the rating with the items of the Carson were almost all significant, 11 out of 12 ratings $p < .01$; Intercorrelations ranged from .15 to .76 median $r = .67$. This final evaluation of the patient lent support to the assumption that modifications in functioning observable by testing and interviewing the day after the LSD experience, and again two months and six months after LSD both by testing and interview, are relatively enduring and significantly related.

However, the rationale behind therapy is not only that it produces changes that are stable and enduring, but that they result in changes in behavior which will be viewed as ego-syntonic both by the patient and the outside observer. The behavior change interview was developed as an attempt to highlight the actual manifestations of such change and to evaluate these manifestations.

Behavior Change Rating

The Behavior Change Interview (BCI) was administered to 67 subjects (86 percent of the sample), 44 men and 23 women. It was scheduled six months after the last LSD experience, but in some cases it took nine months to track down elusive subjects. All who had not moved out of the state were contacted. The null hypothesis implicit in the use of the BCI is that most adults do not change much of their behavior within six months unless there is a powerful impetus for such change. Psychedelic therapy is clearly a powerful impetus. The criteria for rating change as improvement are as follows in instructions to rater:

> If the change appears to be in the direction of flexible, self-aware adaptability and away from the extreme of unrealistic rigidity it is scored as "improvement" except in such cases where movement is from some point of flexibility towards irresponsible or purposeless behavior. Withdrawal—either religious, social psychological, or political—is not to be scored as behavioral improvement. Changes which appear to be predominantly in fantasy or attitude are to be scored "same." If there is any doubt in your own mind or if you do not have enough information on any subscale, do not hesitate to score "unable to judge."

The clinical findings of the BCI are described below. The items and special criteria for judging certain subscales are explained briefly. These data are summarized in Table 2.

TABLE 2

Behavior Change Interview
Clinical Summary of Subscales (n=67)

	a 75%+ improved	b 60-75+ improved	c 60% same	d 7-15% worse	e sex difference
Dreams	*			*	
Eating habits and preferences					
Reading and listening habits		*			
Personal habits	*				
Material values	*			*	
Marriage (n=48)	*				
Emotional responsiveness	*				
Family relations	*				
Work	*				
Introspection	*	*		*	
Health					
Drinking		*			
Religious activities					
Interpersonal contacts	*				
Physical activities					*
Creative activities		*			*
Sexual pattern		*		*	*
Fears					
Ethical views	not scored, too many responses rated "unable to judge"				

1. Over 75 percent of the sample were rated as improved on the following subscales:

   a. Dreams. The items included frequency, retention, use, and enjoyment of dream material.

   b. Reading and listening habits. Television, music, theater, and reading were among the areas covered. Attending to something for its own sake rather than for its distraction value was seen as improvement.

   c. Material values. Shifts from interests in income and fringe benefits to interest in work itself and lessened needs for status and recognition were viewed as improvement.

   d. Marriage (87 percent improved, married subjects only). Items included quarrels, communication, shared interests and activities, and satisfaction with marriage.

   e. Emotional responsiveness. Items dealt with ability and capacity to tolerate, accept, and exhibit negative and positively toned feelings. Other items related to self-confidence and dependent-independent relationships.

   f. Family relations. Items covered relations with parents, in-laws, siblings, and children. Items related to sharing of time, interests and, in the items dealing with children, specific activities such as reading to, feeding, giving gifts, etc.

   g. Work. Items related to amount of work, ease of work, time spent

at work, relationships with other departments, coworkers, superiors and subordinates.

h. Introspection. Items related to the individual's ability to observe himself and to modify his own actions on the basis of his own, not others', observations.

i. Interpersonal contacts. Items covered friendship patterns, membership in organizations, entertaining, manner of speaking and use of vacation time.

2. Between 60 and 75 percent of the sample were rated as improved on the following subscales:

a. Personal habits. Items related to personal hygiene, sleeping habits, housework, and buying habits.

b. Health. Items included headaches, fatigue, exercise, insomnia, and the use or disuse of medication.

c. Religious activities. Items covered church attendance, religious concerns, prayer, belief, speaking about religious subjects. Increased religious activity was not rated as improvement unless it seemed to be part of a more mature religious framework (which may or may not have been more devout).

d. Sexual pattern. Items included intercourse, centrality of sexuality in relationships, masturbation, homosexual relationships, and "perversions."

e. Fears. Items included fear of falling, death, snakes, darkness, isolation, etc.

3. Over 60 percent of the sample were rated as unchanged on the following subscale:

a. Drinking. Items covered amount consumed, when, with whom, how often, hangovers, etc.

4. Over 6 percent of the sample were rated as "worse" on the following subscales (figure after each subscale is percent rated worse):

a. Health (13 percent). All reported declines in health were minor, more fatigue and mild indigestion being the most common symptoms. All subjects but one rated as worse in this category were men.

b. Eating habits and preferences (10 percent). Items dealt with diet, food preparation, interest in food and cooking, etc. Persons rated worse in this category were most often subjects reporting undesirable weight gain or loss.

c. Fears (10 percent). Persons rated as worse often reported greater awareness of fears. One subject developed a phobia of automobile accidents strong enough for him to give up his job as a taxi driver.

d. Marriage (7 percent). The three cases included here are two difficult marriages and one man who was married and divorced within the six-month period between the LSD experience and the interview.

5. There were substantial differences between men and women on the following subscales:

   a. Sexual pattern. Almost twice as many men (32 percent) as women (17 percent) reported no change in this category. This may indicate that a larger percentage of the women felt constricted in their sexual pattern initially.

   b. Creative activities. Items covered most forms of creative expression, painting, writing, woodworking, etc. Over half of the men showed no change, while two-thirds of the women were rated improved. Although LSD has been touted by artists as a chemical means to creativity, the effect was present but not striking in this sample.

   c. Physical activities. Items included gardening, outdoor and indoor sports, hiking, etc. Men rated improved in one-third of the cases, and women in over two-thirds of the cases.

ft appears that behavior changes following psychedelic therapy are real, observable, pervasive, and consistent with other measures usually used in assessing therapy studies. Also, it appears that these patterns of changes are seen as improvement.

RESPONSE OF NORMALS

The results summarized above focus primarily on the psychotherapeutic value of the psychedelic experience. The "illness-oriented" nature of these findings reflects the fact that approximately two-thirds of the total sample resembled the typical case load of an outpatient psychiatric clinic. This emphasis requires qualification since one-third of the subject samples did not present complaints of a psychiatric nature and revealed minimal neurotic disturbance according to both diagnostic evaluation and psychological test data. Examination of presenting complaints, response to LSD, and subsequent changes in conduct of this relatively well-adjusted group indicate a number of distinctive features not shared by the bulk of patients undergoing psychedelic therapy. The differential response of these subjects was particularly noteworthy since a number of investigators have suggested that the potential of the psychedelic experience to enhance self-fulfillment in "normal" individuals is at least as great as its effectiveness as a therapeutic agent. (2) (9) (21)

The interest in altered states of consciousness and the response to psychedelic drugs of adequately functioning individuals seemed consistent with present-day cultural trends. Specifically, the nature of human discontent in a modern technological and affluent society has been undergoing rapid and profound change. Clinicians and scholars representing a wide variety of disciplines and fields of interest have flooded contemporary literature with discussions concerning the quest for identity and meaning, the decline of traditional values and religion, modern man's deep sense of alienation, and the advent of science as a way of life. (18) The current interest in humanistic psychology, Zen Buddhism, existential psychiatry, and self-realization represents reactions to these contemporary trends and

offers solace to the "hollow men" living in an "age of anxiety." Consistent with these trends, the traditional neuroses and character disorders are in decline, being replaced by what one writer terms the philosophical neurosis. (27) The shift might be described as away from preoccupation with *causes* of human action (psychic determinism) toward greater concern with the personal *meanings* of human conduct. It may well be as some critics suggest that traditional psychotherapy with its emphasis on early childhood conflicts and relationships is already obsolete. (8) (31) In short, many individuals who understand all too well the antecedents of their behavior still find their conduct lacking in significance and purpose. These pervasive cultural trends indicate that the age-old question, "Who am I?" is once more in vogue.

As is indicated above, many persons included in the present sample who saw themselves as "normal" and are viewed psychiatrically and psychologically as free of neurotic symptomatology express an interest in the psychedelic experience. Some were dimly aware of potentialities and personal resources which were unrealized. Others expressed a feeling of emptiness and futility while adequately meeting the exigencies of life. Still others expressed a desire to lead their life, not be led by it. These were the representative themes or presenting problems exemplified by this group.

Being relatively free of psychological disturbance, as defined above, these individuals seemed better able to grapple with ultimate problems during the LSD experience. In addition to self-identity and personal worth, questions of love, hate, death, and the reconciliation of opposites received frequent attention. In contrast to other groups, recall of childhood memories and specific interpersonal relations were given minimal attention during the session. While they were seemingly more receptive to universal or "cosmic" concerns as a result of their psychological health and stable life circumstances, it should be emphasized that their particular set toward the experience and the response of the clinical staff to individuals of this character also played a role. In any event, both the content and affective tone of the session contrasted sharply with the modal neurotic patient. Content analyses of tape recordings of each psychedelic experience, currently in progress, will permit a more detailed comparative evaluation of group differences.

Data presently available from follow-up interviews, clinical ratings, and subjective reports of the sessions, indicate that these subjects benefited considerably from the psychedelic experience along the lines of self-actualization, richer creative experience, and enhancement of special abilities and aptitudes. Unfortunately, the original battery of objective assessment tests was relatively insensitive to these changes since they were designed for a clinical population. More recently, the assessment battery has been revised to include measures more appropriate for a normal sample. Thus, it will be possible to compare individuals, differing in personality and presenting complaints, with regard to health-growth dimensions as well as decreases in pathology.

CASE HISTORY

The following case history is included because it highlights many of the points considered above. For other case reports, see Sherwood, Stolaroff, and Harman, (29) and Savage, Savage, Fadiman, and Harman. (23)

This patient was a forty-year old married physics professor with no practicing religion. Though he had been brought up as a reformed Jew, he had estranged his parents by marrying a gentile. He complained of uncontrollable hostility over minor infringements of his rights, inability to relate to his wife and children, and job dissatisfaction. He was fearful of killing people. He had scant sense of personal worth. His hostility was usually triggered by driving on the highway and was often directed at the highway police. This was only part of a repressed resentment against all authority. He also complained of a thought disorder. "My mind always seems to be going a mile a minute in every direction except the one I command." On psychiatric examination he seemed quite narcissistic and infantile. He was so oblivious of the needs and feelings of other people as to appear almost solipsistic. Symptoms included mild anxiety, moderate emotional withdrawal, moderate guilt feelings, and moderate tension. His diagnosis was compulsive personality. He interpreted his LSD experience as follows:

> I interpret the dream as an enlightenment to me of God and all of creation, and of my place within the Universe. I see the Cosmic countdown being presented as a time sequence only so I could comprehend the "All in One" aspect of the Universe. (Here he refers to Gamow's theory of creation known as "the big bang.") One could stop the dream sequence at any point and still call it a presentation of all of Creation. When I see myself on the surface of the bubble, along with all of the others like me, this tells me that all that is made up of elements like me. In the final scene when I see God, I interpret this to mean that I am an integral, although infinitesimal part, of God.

The day after his session, it was noted, "He is staggered by the quality of his 'universal encounter.' States that so much was revealed! He went back to the 'big bang' (beginning of creation). Found its explanation and meaning all around in shapes and music. Appears relaxed and freer. Seems to have by-passed the personal, yet shows signs of latent integration on that level."

One month after LSD he reported no more problems with personal rights. Authority was not a problem. Relations with his wife were better, including sexually. His relations with the children were better. Although the subject reported complete elimination of presenting problems after one month, it was assumed and subsequently verified that this was an over-optimistic statement which would be modified as the subject worked with his problems day by day.

Six months later he requested a second LSD session. He wanted to

look at rage which he still felt whenever his rights were trespassed. He still experienced flashes of anger when his rights were invaded. He felt that this was an automatic reaction, that it was less than formerly. But he viewed it as an overreaction and that this was a symptom of something deeper. He stated that he was getting on better with his wife and children, that he was more willing to deal with people, and that he had overcome much of the guilt he formerly suffered. On psychiatric examination there were no anxiety or guilt feelings, very mild emotional withdrawal, mild tension, very mild mannerisms (halting speech). Hostility was also rated as mild. The psychiatrist noted, "He gives the impression of someone who has changed and changed remarkably for the better. He seems much more mature, much more self-assured, much less demanding, much less infantile, and much more of a human personality. The change seems to be a truly remarkable one."

During his second session, he nibbled at his personal problems and complained that he did not re-experience the big boom. Twelve weeks later, he reported no changes since his session. His relationship with his wife was still fine. He was still not enjoying his work. He has since changed his job and is happy with the change. He thought his second session valuable in solidifying the insights of the first, but premature for new material.

Two years after his first session he felt he had no serious personal problems left, although he still expressed some concern about the meaning of life and his personal worth. There were no psychiatric symptoms, except that his halting speech remained. Both he and the psychiatrist rated his improvement as seven on a nine-point scale. (4)

Occupational adjustment was rated maximal on a five-point scale, interpersonal relations rated as maximal, symptoms rated as slight. Global staff rating is moderate improvement.

The psychiatrist's final judgment was best stated nonpsychiatrically. "This man has come alive. He is fun to be with." This judgment still seems valid two years and six months after his first LSD session.

This patient was a model of someone who does well with LSD. The change seems directly related to the transcendental experience. Chandler and Hartman have suggested that the transcendental experience is a defense against the person's hostility. (5) The available data neither support nor deny this view. But if true, it was a good defense and more ego-syntonic than his previous defensive structure.

The transcendental experience, so common in psychedelic therapy, while most easily described in religious metaphors, has not in our sample occasioned any substantial change in religious practices. In the case above the subject did not look upon his experience as a conversion and he is no more religious than before. Often, however, the transcendental experience is viewed by the subject and the therapist as pivotal to his subsequent behavior and attitude changes. The experience seems to give subjects a different view of themselves rather than a different view of their religious system.

It is clear that in some instances people who have had a single session

with psychedelics within a context of psychedelic therapy will benefit from additional sessions within that framework, or from additional conventional therapy. While the authors utilized a technique centered around a single large dose, it should be understood that the administration *per se* of LSD is only a *part* of a total therapy process. To center all discussion of the effects of this process around that part of it would be both a simplification and exaggeration. Psychedelics, given once in the course of treatment, have been demonstrated to be startlingly effective but never for all individuals nor for all individuals within a given diagnostic category. While it is true, for example, that many alcoholics stop drinking after a single therapeutically-embedded session after sufficient follow-up, it is equally true that many do not. It appears that only with sufficient support and follow-up will the striking immediate gains reported with alcoholics be consolidated. The psychedelic experience serves as an opening wedge. It is not, nor has it been reported to be, the entire process.

It is also true that dramatic and rapid personality changes occur after a single LSD session, but it is not true that all of the person's difficulties are resolved. The case reported here underlies this fact. It illustrates that while the single dose procedure has many methodological and therapeutic advantages, including protecting the patient from *furor therapeuticus,* it is not universally applicable.

COMMENT

The generality of these findings is limited by the selection process. Specifically, the total group comprised individuals who volunteered for the program and bore the medical costs associated with it. Severely disturbed persons were not accepted. Consequently, these subjects cannot be considered to be a random sample. While the influence of this selectivity and to some extent its nature cannot be adequately assessed in the absence of various control groups, it is worth specifying those selective factors which are *not* narrowly represented. All within the adult range, the subjects were widely distributed with respect to age, religious orientation, diagnostic type, personality pattern, cultural background, occupation, and marital status. The major limiting factor, insofar as generalizing results, was that the majority of subjects represented the higher educational levels. Specifically, they tended to be college trained. One correlate of this sample characteristic is, of course, higher income or the ability to afford private treatment. From a therapeutic standpoint, we might infer higher motivation for self-improvement and self-understanding, since this stratum of our society has frequently been found to have higher motivation for traditional psychotherapies, and constitutes the bulk of cases seen in individual psychotherapy. (11) (27) No doubt the characteristics of this sample had some effect on the quality of the experience and the subsequent benefit. On the other hand, it is interesting to note that some of the most dramatic results with LSD were obtained with patients demonstrably low in motivation and low in socio-economic status and

educational level. These include cases of sexual deviation, (1) alcoholics, (12) psychopaths, (16) and schizophrenic children (3). In the light of the relatively greater psychological sophistication of the present sample, it is also noteworthy that the frequency of occurrence of transcendental-like experiences is apparently as great in "naive" prisoners and alcoholics. (14) (15) Such communalities are not particularly surprising in view of the key role played by universal and personal symbolism in psychedelic experiences and the relatively weak role of the conscious self (including verbal facility, accumulated knowledge, and intelligence). What seems to be affected by differences in the process-variables noted was the *content* of the experience, rather than its *form, intensity* or *profundity.*

In the present study, differences in the thematic content of the experience were found among subjects with diverse cultural backgrounds. As a case in point, wide individual differences were demonstrated with respect to content in the frequent experience of unity. However, the fact that the majority of subjects experienced a sense of unity, or oneness, seems far more significant than whether the unity was felt with self, nature, the universe, God, or some combination of these. With regard to variations in content, it must be added that content was inferred primarily from observation and the verbal report of the subject. Needless to say, to the degree that he can verbalize the experience, the subject drew on his own particular semantic framework and belief system. One can only speculate on the discrepancy between this communicated account of the experience and the experience itself.

SAFETY

The issue of safety has been debated for nearly a decade without resolution. In this controversy both sides have tended to be guilty of special pleading. In adding to this debate we have tried to avoid stating any conclusions not amply supported by our data. The data available to the public are certainly confusing. The reasons and the details for this confusion are treated elsewhere. (24) Our own feeling is that LSD used properly is an important addition to therapy, that LSD when misused is a very dangerous drug, and that long-term adverse reactions have occurred and will occur in persons taking it. We make a sharp distinction between psychedelic therapy and ingesting LSD, mescaline, or related substances. Used with ordinary caution by persons trained in its use, we find these substances safe and valuable in the framework herein described.

Implications for theory: One of the more accepted psychiatric traditions is that therapy cannot be speeded up. Thus traditional facilitators such as hypnosis and narcosynthesis have fallen into desuetude. The rationale has always been that the momentary lowering of defenses leads only to re-constitution of the defenses in another form. The relief of one symptom was thought to be followed by a symptom equivalent. In our sample we found no evidence for such symptom substitution. The data suggest instead that the subjects were overdefended, that they had

habitually reacted in ways which prevented mature testing or re-evaluating of those areas of functioning and perception which occasioned the initial defenses. The patients, given the opportunity of experiencing directly without the filter of their usual defensive modes, found themselves able to do so; the maladaptive defenses, found by the subjects to be anachronistic, often crumbled away over a short period of time. Thus, rapid personality changes do occur and the changes may persist, even though the occasioning event for the change was within a therapeutic milieu.

SUMMARY

Seventy-seven persons were given psychedelic (LSD) therapy in an outpatient setting. The single high-dose technique was employed and included extensive preparation and follow-up. Therapeutic effectiveness was determined by comparing the results of psychological tests (MMPI, ICL, and the Value-Belief Q-Sort), clinical evaluations similar to those employed in studies of psychotherapy, and a Behavior Change Interview. All measures seemed to indicate a shift towards more ego-syntonic behavior for most subjects although significant differential effects (in type, extent and duration of change) were found related to diagnostic categories. A case history was presented and results discussed in terms of safety factors, the relative effectiveness with normals and neurotics, and theoretical implications.

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DISCUSSION

Dr. Savage: May I call your attention to these drawings by an artist who was treated with LSD. She was carefully prepared beforehand to direct her fantasies in a more hopeful direction.

In Figure 1, the drug begins to take effect. There is a powerful urge to free herself of restrictions. She begins to cast them off starting with her clothes.

In Figure 2, she begins to cast off the habits and restrictions of her mind. She feels that she is "leaping into the unconscious." She is falling.

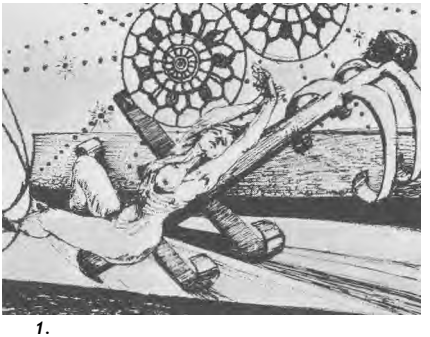
In Figure 3, she has fallen into hell, her own rib cage grows out to encase her, she fears the light, she is in terror and despair, she has seen death.

In Figure 4, she is half skeleton, half woman, but she has recalled hope and now seeks light. She stretches a hand for help from the human world.

1.

2.

3.

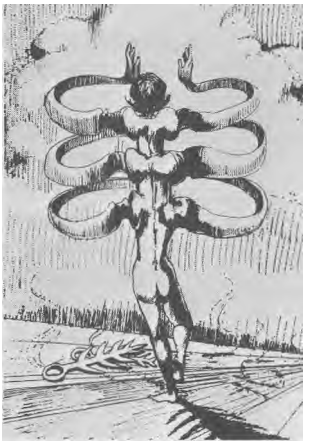


1.

8.

4.

5.



6.

9.

Figure 1. In the present case, the artist was carefully prepared beforehand to direct her fantasies in a more hopeful direction. In this drawing the drug began to take effect. Her first sensation was a powerful urge to free herself of all restrictions. She began to cast them off, starting with the clothes she wore.

Figure 2. Now she began to cast off the habits and restrictions of her mind. She felt that she was "leaping into the unconscious." She was falling.

Figure 3. She has fallen into Hell. Her own rib cage was growing out to encase her. She feared the light, she was in terror and despair, she had seen death.

Figure 4. She was half skeleton, half woman, but she has recalled hope and now was seeking light. She stretched a hand out for help from the human world.

Figure 5. Her yearning for light and warmth were now so strong that her very ribs reached out for it. She could almost touch a wonder—"a living flame."

Figure 6. Still reaching for the light, her ribs were beginning to be clothed in human flesh once more. They stretched upward in striving or prayer.

Figure 7. Now her own skeleton detached itself from her body to become a cross. She was crucified on it, she felt one with Christ.

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Dr. Ling: I'd like to ask the speaker about the treatment of artists. I'm interested in these sketches. Somewhere Freud said it's unwise to analyze artists. Was this lady a professional artist and, assuming that she was earning her living as an artist, do you think her artistry was a product of her neurosis?

Dr. Savage: She earns her living as an artist. I don't think her artistry is a product of her neurosis. I'm inclined to think that her creativity was hemmed in by her neurosis. I can't agree that one shouldn't analyze an artist. Why should they be deprived of the benefit of our skill because we have some countertransference problems about art?

Dr. Fremont-Smith: I believe there are other evidences of artists' being released to improved and better creativity under psychotherapy. This idea that one should not analyze an artist is no longer tenable in terms of a good deal of experience.

Dr. Kramer: I want to mention to Dr. Ling that Hans Westmark has written a book called *The Springs of Creativity*, in which he analyzed an artist. It shows the same accompaniment of the therapeutic development with drawings, sketches and art. I don't know the ultimate outcome, as far as the eventual development of the artist as an artist is concerned. She was a twenty-one-year old girl who went on drawing for about two years, and the changes were depicted by her, just as in the case that Dr. Savage has illustrated.

Dr. Servadio: About the old question of psychoanalysis of the artist, I wish to mention three points. First, in the first years of this century the musician Mahler was analyzed, and he was a good musician. Second, the whole question was taken up again in a book by Edmund Bergler, *The Writer and Psychoanalysis*. Third, as a personal contribution, I have had an American writer in analysis for three years. He couldn't write one line when he came into analysis, and after his analysis, he published a novel which was translated into five languages.

Dr. Martin: Does Dr. Savage have any idea of the relapse rate after the psychedelic experience?

Dr. Savage: We have extended our follow-up period on the next series to

one year; and the data, which are not final, do not seem to differ greatly from what I presented here. Long term follow-ups present difficulties. I'll give an example of one young man we have who was doing well until his girl was killed in an automobile accident. This set him back. Freud dealt with this problem in *Analysis, Terminable and Interminable.* You can't cure any one for all time. Trauma and other vicissitudes of life are going to modify your long-range follow-ups.

Dr. Fremont-Smith: If we could get over the word "cure," if we could really get over it, surmount it and put it away, we could do very well indeed. We could then say "improve," to what extent, and over what period of time. But "cure" is something that's bound to lead us astray.

Dr. Ketchum: In view of the discussion as to whether we should use controlled studies, it seems to me that here we could use a controlled study through the use of the MMPI without going through the paraphernalia of double-blind. Furthermore since the MMPI can be applied by any investigator, it would be simple for us to compare results in using this tool. Have you done this in your own institution, or have other people obtained pre- and post-MMPI scores?

Dr. Mogar: I fully agree with that statement. For example, in our own work, because the MMPI has been used extensively to measure personality change as a function of both short and long term psychotherapy, we have been able to compare our results with those obtained using other therapeutic techniques. The mass of MMPI research provides a great variety of valuable comparisons and/or control groups, against which to evaluate LSD therapy.

I'd just like to say, in connection with Dr. Ketchum's comment about the value of experiments, that I agree with him. There is a danger of being "double-blind." However, although it may not be possible or desirable to separate the effects of LSD from its psychosocial context, it does seem important and possible to answer various process and outcome questions such as: Whom does it work with? When doesn't it work, and why doesn't it work? How do various people respond to LSD? What are the optimal conditions of administration? of preparation? of follow-up? These are questions which should be answered rather than merely, "What is LSD's batting average relative to other therapies?"

Dr. Fremont-Smith: Whenever we apply any such test to a group of patients before and afterwards, the result is only what comes out of the assumption underlying the test. It does not answer the question; it gives you an indication within certain limitations, based upon the unproved assumptions which underlie any test that we have of the value of psychotherapy. I keep reminding ourselves of this because even if we had twenty controlled tests we would still have to lean on clinical judgments about the patient. Even that is fraught with many difficulties. We don't have a way of approaching psychotherapy with tests which are sufficiently wide-ranging, in terms of

the total personality and the total body and brain problem involved and which can give us an evaluation that we can lean on heavily. We can say, "As far as Test A is concerned, these are the results," and they only apply to what Test A tells us. Test B may tell us something different. In fact, there are tests now that show us contradictory results.

Dr. Dahlberg: Dr. Savage, a couple of years ago you wrote a paper in which you referred to the increase of resistance following the use of LSD. It was a paper widely reported and frequently given as reason for contraindication to the use of LSD. Do you have a comment?

Dr. Savage: This paper has not been too kindly treated. If one reads it *in extenso,* he would see that I don't condemn the use of LSD in that paper.

Dr. Dahlberg: I read it thoroughly, and I want to take you on the record for it.

Dr. Savage: Let's see if I remember what I wrote. It referred to the psycholytic use of LSD. We did administer LSD in small doses, a hundred mcg weekly, and in the patients in that series there was no question that some resistances which had been overcome, subsequently became re-mobilized. I imagine that this is also true with the psychedelic experience. But I don't think it's quite as extensive as with the psycholytic process. People should know exactly what I said: "Although work with LSD is more difficult than without, I feel that in some measure, it is satisfying to both the patient and analyst. It increases our understanding of psychic processes and relationships. It permits the possibility of new perceptions, new found empathy and understanding. With proper therapeutic handling, these intuitive processes can be kept in awareness and integrated into the conscious part of the personality." I think that when one reads this article he should keep that note in mind, too.

The Hypnodelic Treatment Technique

Jerome Levine, M.D. *
and Arnold M. Ludwig, M.D. **

Since the initial report of the use of LSD (lysergic acid diethylamide) in the treatment of mental illness in 1950 by Busch and Johnson (3), this drug has been used in many different ways to treat various psychiatric illnesses. At this time there is no consensus of opinion and, more importantly, not enough valid data to enable us to know whether any of these treatment techniques has a beneficial effect in any of the disorders. Further, the choice of the technique used is often based on the therapist's biases and previous experience (or lack of it) or on an extension of an untested or unproven theoretical system. The reasoning leading to the development of a technique or the substantiation of hypotheses implicit in its use are almost never discussed or reported.

It is the purpose of this paper to document the development of a new treatment technique employing LSD, describe the reasoning underlying its use, report briefly results of the technique in the treatment of narcotic drug addiction, and make explicit some hypotheses about the possible mechanisms of action to account for the observed results.

Development of the Technique

The original impetus for the development of the hypnodelic treatment technique stemmed from the combination of a need to find improved methods of treating narcotic drug addict patients and a series of serendipitous observations and events. In July 1962 the authors began a two-year assignment in the Commissioned Corps of the Public Health Service at the Federal Hospital for narcotic drug addicts at Lexington, Kentucky. Fresh from residency training and with the on-going program at the hospital as a model, the more usual modes of psychiatric treatment, that is, individual and group psychotherapy were undertaken with a number of addict patients. The results were not particularly gratifying

* Research Psychiatrist, Psychopharmacology Service Center, National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland.
** Director of Education and Research, Mendota State Hospital, Madison, Wisconsin.

either to patient or therapist. In most cases, the patients were not well motivated for therapy. In fact, attendance at therapy sessions tended to be poor and, against medical advice, discharges from the hospital were quite prevalent. The large number of patients to be treated, the short period of time in which to treat them, the poor motivation of many of the patients for psychotherapy, and the rather disillusioning reports of follow-up studies of narcotic drug addicts discharged from Lexington (11, 6) made us pessimistic about currently employed therapeutic procedures.

Because of previous interests, one of the authors (A.M.L.) began to explore the efficacy of group hypnosis as a therapeutic technique (18) and later investigated the role of suggestion in the production of narcotic drug effects and withdrawal symptoms (19). At the same time, the other author (J.L.) began a study to isolate the factors or determinants associated with the decision of patients to leave the hospital against medical advice (15).

The serendipitous observation, which was to introduce us to the therapeutic potential of LSD, was made by Dr. David Rosenberg, then on the staff of the Addiction Research Center located at the U.S.P.H.S. Hospital at Lexington. He noted that some patients who received LSD in a double-blind pharmacologic study of tolerance and cross-tolerance to psychotomimetic drugs (no therapeutic intent involved) spontaneously claimed to have changed their views and outlook toward life as a result of the experience. After talking with one of these patients and being impressed by his story, a literature survey of LSD effects was made; we found that many of the claims of therapeutic benefit made by this patient were similar to claims made in the literature.

Stimulated by this finding, we talked with Dr. Harris Isbell, then Director of the Addiction Research Center, who recalled that over the years there were a few patients who, while participating in psychotomimetic drug studies, felt that their outlook toward life and many of their values (including their attitudes toward drugs) showed marked change in a socially desirable direction.

With this additional information, we were encouraged to investigate the potential usefulness of LSD in the treatment of narcotic drug addicts. Before employing LSD in treatment, however, we found one problem readily apparent. Although some of the patients who had received LSD reported therapeutic benefit they represented only a small fraction of the total number who had taken the drug. Therefore, if the drug was to be employed for therapeutic purposes, it would be essential to develop techniques which would enhance the propensity for a therapeutic effect. Moreover, in terms of what was already known about the hallucinogenic drug experience, we could not see much therapeutic benefit being derived from the illusions, hallucinations, or nirvana-like feelings which frequently accompany administration of the drug. Our own bias was that in order to maximize the possibilities for therapeutic success, it would be necessary to control the LSD experience and divert or channel whatever therapeutic potential it might possess toward the more conventional notions of psychological therapy, such as directing the patient's attention to his present

problems and trying to get him to understand them in terms of his previous conflicts.

With these considerations as a starting point, and the previously described work as an antecedent, it is not surprising that the possibility of using hypnosis to augment the therapeutic potential of LSD was considered. From the previous experimental work in modifying narcotic drug effects (19), we hypothesized that hypnosis could be used to modify the LSD experience and we would have to structure it in ways which might be of therapeutic benefit. A subsequent review of the literature with regard to the use of hypnosis to control the LSD reaction revealed that this use of hypnosis had been suggested previously by Aldous Huxley (12), and that Fogel & Hoffer (8) had used hypnosis to halt and reinstate LSD effects in a single patient. Gubel (9) reported on the similarity between the hallucinogenic and hypnotic experience, but no previous use of hypnosis to directly control an LSD experience for therapeutic purposes was reported.

Early Results

To test this new treatment approach, we embarked on a pilot study with twelve narcotic drug addict patients (16). Frankly, we were surprised to see just how well hypnosis could be used to control, modify, and direct the LSD experience. Many of the patients made dramatic claims of therapeutic benefit, expressed a strong conviction that they should remain abstinent, professed marked symptom relief, and claimed to have a new lease or outlook on life. Since this study was uncontrolled, and only developmental in nature, we next undertook a controlled study in which seventy narcotic drug addicts were assigned randomly to five brief treatment techniques employing LSD, psychotherapy, and hypnosis. The results of this study revealed that patients treated with the hypnodelic technique (LSD + hypnosis + psychotherapy) for a single session showed greater improvement than patients treated with a single session of a) LSD + psychotherapy, b) LSD alone, c) psychotherapy, or d) hypnotherapy when evaluated two weeks and two months after treatment (20). In addition, a more marked alteration in consciousness was obtained during the hypnodelic treatment session than with use of any of the other techniques (17). Since the detailed reports of these studies are to be published elsewhere, we would now like to describe the hypnodelic technique and some of our hypotheses about its mechanism of action.

Description of the Technique

The term "hypnodelic" is a contraction of the two terms "hypnosis" and "psychedelic" and would seem to be appropriate since it indicates the technique and class of drug used in the treatment.

The following is a description of the technique as it was used in the studies conducted at the U.S.P.H.S. Hospital at Lexington, Kentucky. Each patient was seen for two sessions, each lasting two to three hours. The initial session was used as a preparatory or training session and was

divided into two parts with the first half devoted to gathering psychiatric information which would be used in the second treatment session. Emphasis was placed on chief complaints or symptoms, past history (especially family and marital), self description, and an evaluation of most frequently used defense mechanisms. Following the interview, the patient was "trained" in hypnosis by using a high eye fixation induction technique. Thus, the patient had some idea of what to expect during the next treatment session, and the therapist had an estimate of the patient's response to a hypnotic induction procedure.

The second session was held from one to ten days after the preparatory session. Shortly after breakfast the patient came to the therapist's office where the previous training session had been held (ordinary clinical office, no special visual or auditory appointments). After being seated, he was given a glass containing LSD (lysergic acid diethylamide tartrate) dissolved in distilled water. The dosage used was 2 mcg per kilogram of body weight and usually amounted to a total dose of 125-200 mcg. Following ingestion of the drug, the patient was allowed a few minutes (less than five) to "settle down" and to see if he "felt" any effects of the drug. Immediately after this a high eye fixation hypnotic induction procedure was administered for approximately the next 45 minutes, which is about the time it takes for LSD to begin to have its effects. In this way the hypnosis and LSD effects are brought on together in a smooth, natural sequence. Technically, we believe this is a much more efficient way of producing the "hypnodelic state" than by first allowing the LSD state to develop and then trying to superimpose a hypnotic trance. Many of the experiential aspects of the LSD experience seem to be quite similar to the hypnotic experience (9) and this is taken advantage of in using the hypnodelic technique.

When the patient was both hypnotized and under the influence of the drug, the therapist engaged in an intensive psychotherapeutic session with the patient. The detailed information obtained during the previous interview was used to re-examine particular problem areas, encourage abreaction, and make direct interpretations to the patient. Although it is difficult to describe exactly the type of therapy that was conducted, the therapists' orientation toward psychotherapy came closest to the description of "insight-interpretative" therapy given by Ellis (7).

The entire session lasted about two and a half to three hours and at the conclusion the patient was given suggestions to keep thinking and working on his problems and to remember all that transpired during the session. The patient was awakened from hypnosis and then taken to a private room on a medical ward where he was observed frequently, but essentially left alone. Patients continued to actively examine their problems during the afternoon and evening. If they were unable to fall asleep by 11:00 P.M., 200 mg of pentobarbital was administered. The next morning patients were seen briefly by the therapist to be sure that all drug action had subsided, and then returned to their regular hospital routine.

Undesirable side effects or untoward reactions were surprisingly infrequent. The most common was insomnia on the night following the

treatment session, but this was readily controlled with barbiturate sedation. Headache, transient nausea, dizziness, and diarrhea were seen in isolated cases. Psychological side effects such as transient anxiety, mild agitation, and depression were also seen. However, it was not necessary to use chlorpromazine or any other agent to terminate a session because the patient became "too disturbed." One transient paranoid reaction was noted, but subsided within seventy-two hours after therapy. Three weeks following a therapy session, another patient showed an accentuation of psychopathology which required her transfer to a more closely supervised ward for approximately eight weeks.

In general, it was felt that the number of undesirable effects was minimal and could be managed with routine hospital procedure.

Possible Mechanisms of Action

Although it may seem almost magical that a single or a few treatment sessions can give rise to substantial therapeutic change, there are, in fact, numerous reports by investigators using hypnosis (2), narcotherapy (13, 25), psychotherapy (10, 14, 24, 26), and "psychedelic therapy" (1, 4, 23, 28, 29) that these changes do occur. Schmiege (27) has pointed out that many accept the fact that certain traumatic incidents occurring early in a person's life may produce serious psychological consequences, but for some reason there are only a few who are willing to entertain the hypothesis that one or several profound therapeutic experiences can produce marked and lasting improvement in patients.

With respect to hypnodelic therapy, we should like to make it clear that we do not believe that this therapy works in any magical or mystical way nor are *deus ex machina* explanations necessary to explain its mode of action. We feel that a rational explanation can be arrived at by considering the psychological effects induced in the patient by the interaction of LSD and the particular therapeutic context.

Concerning the role of LSD with respect to therapeutic change, it is our impression that the primary contribution of this drug is its ability to produce a mental state in which thoughts and feelings assume an exaggerated sense of meaning, importance, and significance. While under the influence of the drug, patients seem to have a prolonged form of "eureka" or "aha" experience whereby old ideas may be seen in a new light ("insight") and new ideas become more readily accepted. These ideas tend to become imbued with a new sense of intellectual and emotional appreciation. Recently, Ditman (5) reported a similar explanation in claiming that "the drug-altered state appears to be one of greater *impressionableness,* if internal and external stimuli take on a greater valence in awareness." Thus, although the authors' approach to therapy was predominantly an analytic, insight-interpretive one, we were not so much struck by the confirmatory evidence" produced by patients for our theoretical orientation as we were by the increased meaning and significance which the patients attributed to our explanations and interpretations.

Now, in what ways might the addition of hypnosis to LSD increase therapeutic effectiveness? Since hypnosis is induced during the thirty

minutes to one hour preceding the onset of drug effect, the patient can achieve a state of relaxation and seems better able to "give in" to the ensuing experience. During the hypnotic induction, the patient "works" closely with the therapist and this relationship tends to be maintained throughout the drug experience. Because of the "demand characteristics" of the hypnotic situation (21, 22), it is easier to structure, direct, and shape the session in ways the therapist deems important.

The context of hypnosis seems valuable in another way in that it is not necessary for the patient to be strictly logical throughout the session. Contradictory or ambivalent thoughts or feelings, for example, can be entertained and better understood rather than being summarily dismissed. Moreover, the patient's ordinary conception of time tends to change; and he seems better able to make and understand connections between his present feelings and behavior and certain traumatic or unhappy incidents which occurred during his past. In general, then, the context of hypnosis tends to make the acceptance of the unexpected, "non-rational," or novel more permissible or even possible.

Although the authors conducted therapy using a psychoanalytic framework, we do not believe that this particular orientation was essential for successful therapy. The particular theoretical orientation (Freudian, Jungian, Adlerian, Existential, etc.) seems less important than the necessity of providing patients with a framework or structure in which their problems and difficulties can be understood. The particular formulation of a patient's problems tends to serve as a "nidus" upon which he can structure and organize his thoughts and feelings.

It was noted that the treatment did not terminate with the completion of the three-hour hypnodelic session. After returning to their rooms, patients continued thinking and working on their problems and experiences, and it was during this time that many began to feel "the pieces of the puzzle were fitting together." For many, the treatment experience remained vivid in their minds and tended to induce a period of introspection and consideration of their problems which continued throughout a two-month evaluation period.

Also, with respect to possible mechanisms of action, it is interesting to note, as reported in a separate paper (17), that during hypnodelic therapy a significantly greater "alteration in consciousness" is produced in patients compared with any of the other techniques used. Whether there is a causal relationship between the degree of alteration in consciousness and the amount of therapeutic change is an intriguing hypothesis.

Conclusion

Thus, hypnodelic therapy would seem to offer much promise in the field of psychotherapeutics. However, it should be made clear that the authors do not consider this the only way in which therapy with LSD should or can be conducted. It appears to be a useful technique, but many controlled and long term follow-up studies will be necessary to determine its efficacy and usefulness compared to other forms of psychedelic and psychiatric therapy.

DISCUSSION

Dr. Dahlberg: What do you speculate is the role of hypnosis in intensifying the results of psychodelica?

Dr. Levine: This hypnosis was induced about thirty to forty-five minutes before the LSD had actually had its major effect. The patient is working with the therapist during this time in terms of the hypnotic induction. We feel that the patient and therapist are working more closely together and develop a particular relationship.

The context of hypnosis also seems to be useful in another way, in that patients don't find it necessary for them to be completely logical throughout the session. There's something magical about hypnosis, where they expect that unusual things can happen; therefore, they are more open to novel interpretations, different ways of looking at things and some of the other sorts of experiences. So, we feel that the addition of hypnosis makes the non-rational or the novel more acceptable.

Dr. Fremont-Smith: How much of a part does the post-hypnotic therapy —post-hypnotic suggestion—play in perhaps prolonging the effect?

Dr. Levine: Well, we don't prolong the effect of the LSD, and we don't give any—

Dr. Fremont-Smith: No, but you said post-hypnotic suggestion during the hypnosis.

Dr. Levine: We suggest to them that they remember everything that transpired during the session, and that they continue to work on their problems.

Dr. Fremont-Smith: Isn't that a post-hypnotic suggestion?

Dr. Levine: Yes, but not of the nature that the drug response continues. Also, we feel that with hypnosis where the altered time sense comes in, patients are more apt, or more readily able, to see in what ways their previous experiences may be related to their present symptomatology.

Dr. Dahlberg: I just wanted to bring out one point here. I think you have an excellent type of therapy combining these two things. Some twenty years or so ago, Janet Rioch wrote a paper published in the Journal of Psychiatry, in which she made some comparisons between the post-hypnotic suggestion and the kind of parental injunction which is given early in life—the sort of injunction such as "You're a bad boy," "You're going to turn out just like your father did"; and also the more subtle sort of thing such as Edith Jacobson has pointed out. There is some comparison in the way these two work. And I think that the kind of intensifying of suggestion which we are talking about here might go somewhat along the same line. Of course, the same sort of suggestion as to what will occur in a psychedelic experience is the sort of thing that is used in the type of psychedelic

experience talked about in the "Tibetan Book of the Dead," which is an indoctrination.

Dr. Levine: We don't use this period of indoctrination, similar to that which some of the other speakers talk about in psychedelic therapy, a period of preparation; we don't use this. But we use the context of hypnosis to structure the LSD setting.

Dr. Dahlberg: Yes; but there is a kind of similarity, I think.

Dr. Baker: Dr. Levine agrees, I know, that probably expectation and suggestion sort of creep into the follow-up results. I suppose that's hard to sort out.

Dr. Levine: Of course, I couldn't give a detailed statement now. The paper will be published in the American Journal of Psychotherapy—the next issue or the following one. And we did use the controlled comparison design. That is, we had five different treatment groups: one that received all three conditions, LSD, hypnosis and psychotherapy; one that received LSD and psychotherapy; one that received psychotherapy alone; one that received LSD alone; and one that received hypnotherapy.

Dr. Fremont-Smith: In one treatment session?

Dr. Levine: In one treatment session.

Dr. Fremont-Smith: And when was the time that you made your evaluation?

Dr. Levine: Two weeks and two months following therapy.

Dr. Fremont-Smith: Two weeks and two months. This also is in great contrast to other kinds of follow-up, which might be four years later.

Dr. Levine: We had hoped to do something of this sort, but Lexington being so far removed from New York City, where most of the addicts live, this was logistically not possible.

Dr. Fremont-Smith: I'm not criticizing, I'm just calling attention to the sharp differences in what we're using.

Dr. Blair: Were most of these patients in therapy chosen at random or by specific preference for the treatment considered?

Dr. Levine: There were certain specifics for the selection of the patients to participate. Once they were selected, however, they were randomly assigned to any one of the five treatment groups. There were two therapists involved, and that selection was also random.

Dr. McGlothlin: Your description of the psychedelic—I mean, hypnodelic treatment, as I understand it, was only the one session with psychotherapy during the session, but no follow-up psychotherapy. Now, from your experience, would your clinical judgment be that if you had given more psychotherapy it would have been better, or more efficient? Have you had any observations?

Dr. Levine: No, we don't. We explained to the patient that this was the treatment session. Following this, while we would be available on a demand basis, we wanted them to work on their problems themselves; and it was quite surprising how well they did do this. The question of whether follow-up psychotherapy would be beneficial at that point, I think, is one that is best answered experimentally.

Dr. McGlothlin: Your control group, though, that got just psychotherapy, was that a one-session psychotherapy?

Dr. Levine: That was also a one-session psychotherapy.

Dr. Unger: What was the order of therapeutic effect? In the five treatment groups, what was the order of benefit, so to speak?

Dr. Levine: The ranking would be as follows: hypnodelic; psychedelic—that is, LSD plus psychotherapy; hypnotherapy and LSD alone, together in the middle; and then psychotherapy alone.

Dr. Fremont-Smith: Remembering that this is all in the context of one treatment, and a two-weeks' and two-months' follow-up.

Dr. Abramson: I think the experimental design would be much better if you had divided your seventy-seven addicts into two groups: one, LSD alone; and one, LSD plus hypnosis. Then, wouldn't you have a statistically better sample to discuss the effect of hypnosis on the LSD reaction, rather than have seventy divided by five?

Dr. Levine: Since we have shown statistically significant results in five groups of fourteen, we have achieved the same level of significance as if we had used larger "n's." If we had shown no statistically significant results, say only a fringe, then having larger "n's" might have done the job. But, by virtue of the fact that we did find statistically significant results, we have actually contributed more information, because we have four other control groups, if you want to look at it that way.

Dr. Abramson: Are you sure that the significance of your statistics wasn't determined by the criteria that you'd chosen to consider significant?

Dr. Levine: All I can say is that these statistics were measured— the statistics that were used were those that are ordinarily used and reported by other scientific investigators. The data will be published in the American Journal of Psychotherapy.

Dr. Abramson: But I still feel, however, if you wanted to study the effect of hypnosis, that's what you should have studied, with a much larger sample. You should have isolated that system with respect to one other system, and not done what I think you did—studied too many possible systems. With such a small sample, evaluation of such diverse forms of psychotherapy raises many difficulties.

The Importance of the Non-Verbal

Betty Grover Eisner, PH.D.*

The question of change in human beings is one which has been debated since man became aware of himself. Those who believe it is possible are about equally matched in number and fervor by those who hold that fundamental change can never occur. With respect to personality change in neurotic patients, what little data are available indicate that effective therapies claim between 50 and 70 percent improvement of neurotic difficulties, irrespective of type of therapy. This leaves a hard-core residual of 30 to 40 percent which seems to be intractable to any sort of technique. Within this hard core one finds the character disorders such as addictive personalities and the borderline psychotics. A very low percentage of change is reported anywhere for schizophrenics, alcoholics, and drug addicts.

At the present time, psychotherapy** is based almost exclusively on verbal interchange. To the superficial observer, it appears that the whole process would come to a grinding halt if either or both participants were forbidden speech. On closer inspection something important appears to be going on between doctor and patient which is totally unrelated to any verbal flow. In fact, it may be in inverse relationship.

Non-verbal activity is brought into brilliant focus in therapy situations where psychedelic, or mind-changing, drugs are used. If one stops for a moment to think, many of the most important moments of life transcend the use of words—in fact words often merely interfere with experience. Far more than we know, body movements, facial expression, tones of voice, and actions convey the main flow of communication, rather than words.

In the course of almost a decade of therapeutic work, primarily with LSD but more recently with Ritalin (because of the lack of clarity of the status of LSD), it has become increasingly apparent that probably the

* Clinical Psychologist, Los Angeles.

** Psychotherapy, a theme on which as many variations can be played as there are varieties of psychotherapists, is generally agreed to be a process of interaction between individuals for the benefit of the one, or several, with problems with the one who, if not without problems, is presumably trained in handling them.

most important part of what we call the therapeutic interaction takes place at a non-verbal level.

In this highly logical and verbal society—where semantics appear to be the trafficway of human relationship—it may be disconcerting to find that words often complicate interaction rather than simplify it. This is particularly evident in relationships where neurotic elements are present. In our culture ego defenses most commonly use verbalization as a method of manipulation and control. Words are also used, consciously or unconsciously, to deny basic motivation and intent.

As our western civilization has grown toward the logical, the rational, and the scientific, attention has been diverted (sometimes forcibly) from the intuitive, the spontaneous, and the so-called irrational. This split between rational and irrational—between conscious and unconscious—makes an individual feel pulled apart. In order to operate efficiently with other people he must close off his deeper levels. The price of effective closure is a feeling of emptiness and loneliness; as a by-product creativity shrivels and dies.

The use of psychedelics has made excruciatingly but excitingly clear the extent to which adults have been conditioned away from access to the unconscious during the process of growing up. The psychedelic experience gives glimpses that life is intended to be full of brilliant color, stereophonic sound, flowing dimensionality on the sensory level, and unitive and ecstatic experience in relationship to the one—or to the many.

During the past nine years of work with mind-changing drugs, the focus of our interest has turned increasingly toward the removal of barriers which stand in the way of the individual's fulfillment of his creative potential. In the language of psychotherapy, this means concern with change of character—change of lifelong habit patterns of perception and action. Most of the patients seen and worked with have been from the hard-core residual of individuals who have not been helped by any form of ordinary psychotherapy.

We have watched the psychedelics emerge not only as the fastest potentiators of character analysis but in many cases as the only possible tools able to create conditions wherein change can occur—tools, so to speak, for opening doors closed by heavy locks and bolts of long disuse.

It has been of interest and importance to discover that with knowledge and experimental experience, smaller doses can be substituted for larger ones, and less potent, less esoteric drugs can be as useful as LSD and mescaline. The techniques that make this possible also speed the process of psychotherapy. One factor is the increasing use of individuals trained in drug work and in group processes. (By "drug" is meant treatment with LSD, mescaline, Ritalin or amphetamines, used alone or in various combinations, and also experimental work by the research group with other psychedelics such as ibogaine and ololiuqui.) (1). The other is the development of a whole new series of therapeutic techniques—mostly non-verbal. This paper is concerned with this latter aspect.

From our very first experiences with LSD, it became apparent that subjects or patients were able to go more deeply into the drug and to

experience insights more integratively when there was no pressure on them to translate the experiences immediately into words. Optimal drug conditions were found to occur when: (1) the setting was aesthetically pleasing; (2) music was used as an aid in lessening intellectual controls and as a help in "letting go"; (3) the patient was encouraged to follow wherever the material from the unconscious led; (4) verbalization occurred primarily for reassurance, or to slice away misperceptions and to remove resistance toward going deeper into the experience. Reports of subjects or patients, written after the experience was over, were a standard part of the procedure, and all of the LSD sessions themselves were tape-recorded.

In the course of practicing psychotherapy with the aid of psychedelics, additional non-verbal techniques were developed for specific areas such as: (1) anxiety and fear; (2) hostility; (3) passive resistance (sometimes to the verge of suicide); (4) resistance toward feeling of emotions; (5) resolution of problems from time past.

Most of the techniques were developed during a pilot study of drug therapy in 1956-1957 (2). During sessions the therapist remains with the patient while drug action occurs—three hours with intramuscular Ritalin and up to eight hours with LSD. A variety of music is used to potentiate the drug action and other aids, such as personal and family photographs, are used. The most important factor aside from the presence of a psychotherapist is the introduction of other individuals into the session, the composition of the group depending on the effect desired.

The introduction of additional individuals (from a wide professional spectrum who had themselves gone through drug work, not professionals in the sense of degrees such as M.D., Ph.D., or M.S.W.) arose from the initial observation that the simultaneous presence of both a male and female therapist—even if one or both never spoke—deepened the drug experience and alleviated anxiety. A subsequent discovery was the enhancement of the range and variety of deepening and therapy-potentiating experiences when different types and numbers of other individuals were present. Also, during moments of fear and anxiety it was found extremely helpful to the patient to have some sort of physical contact, someone taking his hand or touching him reassuringly.

As can be seen, these two methods are contrary to the general stream of conventional psychotherapy: the introduction of additional people into individual therapy sessions; and physical contact. An example of the therapeutic benefits of physical contact occurred early in the pilot study. The patient, himself a doctor, seemed to request and at the same time enjoy struggling against the firm physical restraint of the male and female therapists. Afterward, the patient pronounced it one of the most "freeing experiences of his life. In recent years lap sitting has become routine in moments of the patient's regressive needs. The need to avoid any genital sexual arousal during any form of physical contact must be very clearly underlined.

As patients completed LSD-therapy treatment, and went through concomitant character analysis, a number of them became so interested in

the therapeutic process and the enhanced creativity being manifested in their lives that they constellated into a loosely-knit group. They meet together weekly as a research group. This group forms a pool of individuals trained in drug work from whom "assistants" are chosen for drug sessions according to what sort of person or composition of group is necessary.

During a session these assistants perform several functions: (1.) Support; when difficult problems are being experienced it helps to have sensitive, sympathetic *and* knowledgeable individuals present. (2.) Aid; verbal and non-verbal assistance from people with unique capabilities, who are familiar with the unusual new techniques developed in the past few years, extend the skill and experience of the therapist. (3.) Role-taking; an oedipal situation can be worked out immediately with "mother" and "father" both present, or even more important, family problems and interactions can be understood with the entire cast of characters present—often including grandparents and important early figures as well as parents and siblings. (4.) Matrix-creators; the optimal psychic setting can be achieved and "energy" can be made available for "trips" to other levels of consciousness, or for dealing with complicated problems from past time, when skilled assistants are present.

The force of immediate necessity and danger prompted some of the first non-verbal techniques—those which had to do with manifestations of the patient's hostility. Now, although newer techniques have almost supplanted the original active hostility discharge mechanisms, the early ones were very valuable developmentally. At certain times they are still useful and seem to perform a function that no other technique can—especially the shouting-spitting discharge.

Because emotions are vastly heightened under drugs, and the patient is directed specifically to go toward the frightening or repulsive, a method for the safe discharge of hostility was essential in the event that fantasy should prove inadequate. This need became critical when the work was moved from the Veterans Administration to private practice, where hospitalization occurred only on the day of treatment. The need arose not only from the different treatment situation, but also from the change in the type of patient.

At the Veterans Administration, subjects were carefully selected from among "desperate" veteran in-patients, or equally "desperate" volunteer out-patients, who had hit rock bottom and seriously wanted to get well. In private practice, the patients were either individuals without ascertainable somatic difficulties, referred by the supervising physician, or psychiatric referrals with histories of from five to 25 years of unsatisfactory or incomplete psychotherapy. Since all of the patients were operational, or non-institutionalized, they could to some extent camouflage the amount of their emotional disturbance and hide their necessity to submit to the Painful process of therapy in order to improve.

The line of authority must be firmly established at the beginning of any drug treatment. This is doubly important when dealing with a patient with whom there is any possibility of violence. It is made very clear that the therapist is in complete control during drug sessions and that

there are appropriate sanctions for any form of non-obedience. Several strong men of the group are present at all drug sessions when potential violence is suspected.

The point of hostility discharge is usually reached in the second or third drug session. As it approaches, very precise and specific instructions are given: the patient is to discharge hostility only in ways which do not hurt either himself or anyone else. From the very first drug session, he has been told that a cardinal rule of treatment is that he will not hurt himself or anyone else.

It is explained that hostility discharge helps alleviate guilt, since unexpressed hostility always creates guilt. If injury were to occur, guilt would be increased and the whole process would have to be repeated. Permission is given to destroy anything in the hospital room—with the proviso that any damage will be paid for. The prohibition against injury is repeated until there is emotional understanding and acceptance. The usual signal is a flick of expression in the eyes and a slight relaxation of body tension. The signal is unmistakable to those who have worked with potential violence and is usually noted by several individuals present. It is made very clear that immediate consequences—up to restraints and/or eviction from treatment—will follow any breach in the prohibition.

A number of methods of hostility discharge have evolved which have varying degrees of usefulness depending on the situation: (1.) verbal —yelling, screaming, and shouting, either words, noises alone, or the alphabet; (2.) clay-throwing; (3.) pounding on all sorts of things; (4.) destruction of inexpensive or useless objects such as old dishes or cardboard cartons; (5.) throwing eggs at one's reflection in a mirror; (6.) rhythmic movement—pounding, stamping, or dancing—usually in the company of others; and (7.) eye to eye discharge, either verbal or nonverbal.

Clay-throwing is one of the most valuable methods, especially for women at home (men can always use punching bags). Slamming clay on the floor or on a board or table until the patient is exhausted drains most of the hostility. Patients can then indulge their need to manipulate, since working clay satisfies the need to manipulate on several levels. Finally, this kneading, manipulating activity gradually slips over into a creative one. No matter how violently the patient first threw, smashed, or fragmented the clay, he ends up making some meaningful and often extremely artistic object.

The pounding of pillows or the mattress is a good hostility discharge method, but the smashing of cardboard cartons has proven the most efficacious in the hospital or unprepared setting. Empty cardboard cartons from the grocery store make a most satisfying noise when beaten with the open palm or fist. When smashed against the wall or doorway they make a magnificent racket and do no damage. Further, the boxes can be torn to shreds and thrown on the floor or at the walls, they can be twisted with all the fury of pent-up desire to distort the world out of shape, and the shreddings of four or five boxes, knee-deep around the room, leave a most satisfying disorder.

During the first discharge of hostility the patient will usually test limits. The commonest method is to skin or bruise the knuckles, but sometimes a fist barely misses the therapist. The infraction of limits must be immediately pointed out, and the beating of boxes (or whatever) halted temporarily while notice is given that the patient has broken the rules and will not be allowed to continue unless he stays within the defined structure of the situation. Even slight injury is not allowed. In group work under drugs, it was found necessary to provide gloves for box beating since there can be such strength of discharge that hands are bruised before anyone is aware of the fact. It is imperative that controls be tightly maintained when a number of individuals are simultaneously under drugs.

Thin plastic dishes were used for one patient who was subject to violent, irrational attacks of anger. He split, shredded, and snapped the plates with great pleasure. In what appeared to be accidental to both doctor and patient a thin splinter of plastic gashed his wrist. However, after the cut was dressed, the patient started to put his fist through the window and was restrained only by an immediate, sharp command. This would have been unusually dangerous since the windows had interwoven chicken wire and were barred on the outside. Further discharge of hostility for this patient had to be postponed until the next session, and the patient was quieted and given his "turn-off" pills. (One and one-half grains of Seconal and 25 to 50 mg of Thorazine, given routinely after LSD sessions, usually for use at bedtime).

The discharge of hostility is usually non-verbal, although it may be accompanied by sounds of fury or words of violence and obscenity. Sometimes there is a running stream of vituperation, directed either against the box or the therapist, totally out of context with the actual situation, but deeply meaningful at another level or from another time in the patient's life. When verbal discharge is desired from a patient who is incapable even of saying "boo" to his shadow and who must be taught to speak up for himself and out at others, the alphabet has been found to be a godsend. While the passive "good" patient wouldn't consider uttering a critical remark to the therapist, he can be persuaded to say the alphabet with force. Shortly he can be made to shout it, and eventually to intersperse words of hostility with the letters. Eventually a healthy hostility discharge can be initiated and deep feelings of frustration and hatred can be expressed.

It is extremely important that the therapist be very still during the more violent discharges. Any sudden motion or change in the situation can precipitate the patient out of control. One young man started after the doctor's assistant when she made a sudden movement. Another went for the therapist's throat when a doctor entered the room unannounced and made a provoking remark. These patients were brought back to awareness and control by a sharp command and the firm restraining hand of the therapist. In such moments the authority and force of the doctor brings the situation back into control. This authority, established at the beginning of drug treatment, must be immediately and firmly exercised.

Each time a "core" of hostility lets go, there is a sudden, usually dramatic, shift in behavior. Common forms are: bursting into tears; throw-

ing arms around the therapist in joy or love; falling exhausted in a comatose state; or a shift in the level of consciousness (i.e. with LSD-like reactions of brightening of color and shifting of reality, abrupt psychic changes as though to another time or person, etc.). When the main core is excised, there appears an almost miraculous change before the observer's eyes. Usually after tears of joy the patient undergoes an integrative experience, feeling himself completely in harmony with himself and his environment and often having a mystic experience with cosmic elements.

The greatest caution must be exercised in the discharge of hostility with passive, deeply disturbed patients who have never been able to express hostility directly. Fortunately and quite by chance a method was stumbled on which is safe and effective for all categories of patients. It is used only when fantasy is not effective and the direct physical discharge of hostility is too dangerous (because of liability of response to the drug) or when a fast-acting technique is needed. The individual assisting with this method of discharge must be very clear about his own motivation and the implications of the technique personally and culturally. The procedure may appear at first glance unorthodox or offensive, but those interested in intensive psychotherapy with deeply disturbed patients under drugs will see it as preferable to a possibly murderous attack, with all the concomitant therapeutic complications.

The patient for whom the procedure was invented is a borderline schizophrenic. In the course of intermittent drug treatments, over three years, he had gradually changed over from convulsive bizarreness and dissociative episodes to productive work of extraordinary caliber. His relationships with women had improved enough for him to be engaged briefly. Two earlier experiences are relevant: once, when the patient on his own took too high a dose of a natural unrefined psychedelic he almost choked to death and went into convulsions; in an earlier hospital session, when 9 mg of psilocybin was followed four hours later by 30 mg of Ritalin intramuscularly, he started gagging and choking, and totally dissociated intellect from emotion.

At the crucial drug session his fiancee was in the process of breaking off their engagement "for his own good." As a small child, presumably also "for his own good," the patient had been taken from the downstairs duplex of his mother and father to the upper floor, where he lived under the constant scrutiny and conflicting authorities of his grandmother and two aunts. Manipulation and seduction appear to have been standard mechanisms of the three conflicting but totally demanding authorities; and the patient's early helpless rage can be imagined. In addition, the therapist was female and consistently insisted on a clear line of authority and "obedience."

The patient had been looking at pictures of his grandmother and aunts, and at the sight of one aunt he started choking. Given a towel he choked, spit, and vomited into it for some time without apparent relief. Suddenly the therapist had an idea—she ordered him to spit into her face. An expression of incredulous amazement suffused the patient's face, followed by one of sudden anticipation. He began spitting in her face. He was kept spitting, as hard and fast as he could, until he burst into tears and fell back on the bed, sobbing out the release he felt.

The technique, as it has since developed, calls for the patient to put his hands tightly on the therapist's shoulders. This gives him the "strength" to keep spitting as hard as he can. The duration of the period of spitting varies according to the productivity of the patient. It must be continuous and as fast as possible. Some patients, after a short time, are just blowing air; others have been observed to go on for as long as an hour and a half of actual expectoration of liquid, with only occasional periods of dryness. A glass of water is offered if the patient desires. One patient with a character disorder took delight in spitting a stream of water (he could retain water for a long period in his mouth) in much the way he had described urinating his name on the ground when he was six.

After long periods of spitting, rest periods are provided, faces are wiped, and encouragement is given. Guilt about the technique is alleviated by the support and matter-of-factness of those assisting. It also helps if the patient is allowed to wipe off the therapist's face and is reassured that most of his initial anxiety- arises from strong conditioning against spitting.

Patients with a core of lethal hostility, whose trust of the therapist is not yet sufficient, will usually refuse to spit. They will do so only when it is clearly demonstrated that they choose to hold onto their illness rather than to perform a symbolic act under order. Once begun, none lack enthusiasm; the spitting is continued until there is a break-through such as that described earlier. During the spitting there is no verbalization at all other than direction or encouragement by the therapist. The play of emotions which pass over the patient's face makes fascinating observation: the spectrum of hostility, sexuality, of pain and pleasure.

The emergence of strong feelings of sexuality, as the spitting progressed, came as a surprise. What starts as irritability and contempt, working up to rage, is soon observed to be interlaced with sexuality. The patient, apparently unconsciously, starts drawing the therapist closer and closer, and must be instructed not to let the hostility slip over into sexuality. Besides attempting to pull the therapist closer, often the patient's hands—male and female alike—start loosening their grip and slipping seductively from the shoulders. This must be stopped immediately and the hands returned to a tight grip on the shoulders. It has been found acceptable to allow the two heads to approach quite close together but touching seems to skew the process from the discharge of hostility into sexuality and lessens effectiveness.

It is quite possible that this would be a helpful technique for use in intensive therapy with schizophrenics. The efficacy of the method has been demonstrated with continued usage and the cultural loading has disappeared from those who have worked with it and at it. Any unpleasant residue washes down the drain with a handful of cold water. Additionally, it has been valuable as an overt demonstration of the extent of the fusion of hostility and sexuality in cases where there is a large unresolved core of hostility.

In certain patients there is an unresolved and intractable residue from the past which, when combined with strong depressive elements, makes it impossible to actuate an overt discharge of hostility. These pa-

tients appear to have made passive resistance their primary weapon and passive resistance to the death a last resort. It is possible that they suffer from a mispereeption—probably from time long past—that their overt discharge of anger caused violent death for someone they loved or else precipitated a lethal attack on themselves. Whatever the reason, even high doses of LSD alone have proven ineffectual in breaking the resistance against expression of hostility, with the resulting very real danger of suicide attempts.

Before the stringent restrictions on the use of LSD another technique for this kind of patient, and also for severe character disorders such as addicts, was in the process of development. It consisted of a high dose of LSD (200 to 300 mcg) and, three to four hours later, 20 to 30 mg of intravenous Ritalin. This appeared to precipitate a repressed psychotic component in the personality which was acted out by the patient, and when handled properly abreacted with subsequent dramatic personality change. It was found wise to put the patient, with his understanding and permission, in mechanical restraints and to have at least four group members present at the time of administration of the Ritalin. It is felt that this technique, in combination with a highly-structured twenty-four-hour living situation such as Synanon, could change and reorient drug addicts within a three-month period so that further treatment could proceed as for the usual neurotic.

A method was developed which has proven successful in aborting suicidal tendencies and breaking particularly intractable passive resistance: actual physical containment by the therapist and members of the group. The patient is held lightly but firmly enough so that motion is at times totally restricted. Holding has been found to be more effective than any form of mechanical restraints. In less severe cases, where there is also fear of physical contact, the group members surround the patient—not touching him at all—and psychically "move in" on the patient, while actually staying physically immobile. This is perceived by the patient as though there were actual physical movement, contact and severe pressure. One woman who was being brought out of schizoid patterns fantasised that members of the group were cannibals, about to devour her by stripping off her skin and then eating the flesh off her bones, as they applied psychic pressure. When the resistance broke she suddenly experienced warmth, relaxation, and love which she had never before felt from a group.

The first patient with whom physical containment was found effective was a girl of 19 who perceived the world as a hostile and destructive place, probably from her first months of life when she suffered continual colic pains. The family consisted of a near-schizophrenic mother, an inconsistent, authoritarian grandmother, a beautiful, older sister, and a manipulative father who stepped out. The girl had been a problem from her earliest years, but visits to a succession of doctors invariably terminated when the mother and grandmother were confronted with initial changes they themselves needed to make.

The girl's seemingly massive control system covered both potential psychopathy and paranoid schizophrenia. Her parents forced her into

treatment because of her initiation of bland sexual promiscuity. LSD treatments, careful structuring of the home situation (the grandmother was sent to "visit" an aunt indefinitely), and combined interviews with patient, mother and father brought her back to the verge of normality within a year. Then an unexpected failure at school triggered a serious regression, with passive resistance on her part to the point of suicide.

The first LSD, which was scheduled immediately, consisted of six hours of nothing but the girl being lost and apathetic in a grey fog. Another session was scheduled immediately when it was found she had taken only half the dosage prescribed, throwing the other half away after having secreted it. Present were the therapist, her assistant, and the patient's mother for the full period, with the physician present for the crucial period. When the usual drug techniques failed to break the resistance, the girl was flipped over onto her face on the bed. The therapist put her weight across the back and shoulders, holding the girl's hands in her own, the assistant took the lower torso, and the mother contained the feet and legs. The order was for complete silence, and that the girl should feel the weight of the three individuals but no painful pressure.

At first the girl tried to brazen the situation through in silence; the others out-silenced her. Next she tried to provoke the participants with clipped, hostile remarks. Finally she resorted to the physical and tried to dislodge the three individuals, first with force and then with force interspersed with false capitulation. During all of this period there was acute pain in the therapist's hands, a sensation as though the bones were being broken.

This pain seemed to serve as a signal of progress in the non-verbal battle (as it has subsequently on so many occasions with different members of the group). After one of the last convulsive attempts by the patient to throw off the containment, the pain in the therapist's right hand diminished appreciably. Finally, after over an hour of the containment, the pain in both hands disappeared. The young girl burst into tears. Her suicidal mechanism had been broken and from that time on there was no problem of depression or passive resistance. Therapy proceeded along normal channels to conclusion.

The method of physical containment has been used most effectively during group sessions where most of the participants except the therapists are under low doses (25 to 50 mcg) of LSD. One member of the group, when physically contained, abreacted having been hit by an automobile (which had occurred when she was about four) and the subsequent three weeks when she had been tied down in her hospital bed. At the following group session she was able to re-experience a drunken sexual attack by her alcoholic father, which evidently occurred after her hospitalization. This patient had been unable to bring these two traumas to consciousness in the 25 previous LSD sessions she had had with another therapist.

Another member of the group worked through, by means of containment, the trauma of his hospitalization for polio at the age of ten. There have also been a number of occasions when the method was used to get the Patient past the fear of close physical relationship with other human

beings, and several times strong passive resistance, combined with potentially explosive violence, has been worked through. There seems to be something about complete physical immobilization which forces psychic movement of some sort, thus rupturing passivity or forcing repressed incidents into consciousness.

Action techniques cover a wide spectrum, ranging from tactile exercises to the use of rhythmic motion by a whole group together. Stretching of patients for instance (either by members of the group at head, feet, and arms, or by acrobatic or Yoga-type exercises) quickly alleviates tensions and also aids in the integration of disparate psychic material which impinges simultaneously (as with patients under the drug when too much material of a mediumistic nature erupts from the unconscious). The old Chinese method of hanging by the head for spine injuries or other orthopaedic difficulties might have had more than just physical effectiveness.

With respect to the tactile exercises, it was found that when materials of many surfaces and textures were presented to patients in a session the drug effect appeared to deepen as the materials were felt. The extension of the tactile sense of "feeling" seems to aid an inhibited patient in "feeling" more emotionally. This was found to be so beneficial in helping to widen the affectual spectrum of restricted patients that prescriptions were given to spend at least 15 minutes a day feeling as many different textures and surfaces in the environment as were available.

Fascinating work is being done in Germany by Dr. and Mrs. G. Derbolowsky with having patients feel themselves, starting with one finger and exploring the opposite hand. They report (First International Congress of Social Psychiatry, London, 1965) that this is highly effective in bringing very disturbed patients into contact with themselves and reality, helping their body image and their acceptance of themselves. They have the patients practice this feeling exercise every day for at least fifteen minutes and eventually have them doing it in group situations.

It is interesting to speculate on the semantic and dynamic link between tactile feeling and emotional feeling. Over-restriction in adults might well develop in part from early, invalid limitation of the exploratory and mastery urges of the infant.

Examination of rhythmic motion as a therapeutic technique is in the experimental stage and has been used only in group sessions, although in every large city in the United States there are several dance or movement-oriented therapists. Much success has been reported from methods which use manipulation of the body or understanding of the body in the process of motion. It is interesting to note in this connection the derivation of the word emotion—from motion. If our, and Whorf's (4), hypothesis about the intrinsic connection between the structure of words, their meaning and the structuring of reality is correct, getting patients up from the couch and into motion may help them to bring up feelings and be aware of their own "e-motion."

Music is an indispensable aid in deepening the drug effect—taking the experience out of the intellectual and into the feeling area—and in manipulation of mood. Music by itself can have a very therapeutic effect, or

conversely a very deleterious one, depending on the type, the personal preferences and emotional state of the listener, and the setting. This is especially true for patients under the influence of psychedelic drugs where the "classic LSD state" is signalled not only by the brightening of color, but also by the feeling of being immersed in and a part of the music.

Music is used routinely in all our drug sessions to potentiate the drug and move the patient easily and pleasantly away from the verbal toward emotional and symbolic levels of consciousness. It enhances emotions, and certain music (or non-music, such as the recording of the mushroom ceremony) seems to act as a specific aid in helping the patient work toward and through certain difficult areas (e.g. hostility). Music will undoubtedly come into its own as one of the important aids in psychotherapy as we move from intuitive hunches, gleaned from empirical observation, toward more precision of usage.

During group sessions, it was observed that participants would often move in time to the music, sometimes leaving the group circle in order to do so more freely. After one particularly long sequence of hostility discharge (through the beating and tearing of cardboard boxes), additional cartons were distributed, primitive music was played, and all of the group members beat out rhythms of their own choice. The resultant intricacy and variation of rhythm patterns was surpassed only by the harmonious feelings of relatedness which came into being.

Following this session, it became common to use group movement in unison in a circle with music (much as with folk dancing) to discharge tense or "loaded" situations and to bring members of a group, under drugs in a session together, into common experience from time to time during the session in order to have optimal therapeutic conditions. (Even simple games like "tag" are excellent for discharging tensions and reorienting individuals toward the whole and away from private experiences.) Moving together in time to music with a strong coercive harmony or beat is the best method found to date for bringing everyone together into a whole.

Psychic methods of non-verbal therapy are a good deal more difficult than are physical techniques—not only to understand but even to describe. In fact, there exists no psychiatric language for most of the procedures, and words either must be coined, such as "eyeballing," or borrowed from other realms, such as "exorcism." It seems important that some record be made of these procedures. In order for communication to occur at all, it is hoped that the reader can suspend his critical faculties until the processes have been described. Then let him jump in with both feet!

"Eyeballing" or "eyeball plunging" (so named by a research group member) is the effecting of psychic changes in the patient while the therapist and patient are looking directly into each other's eyes for a Period of time. While the dynamic process is not understood and the mechanics are obscure, it appears to be a way of bringing subliminal cues into awareness in the visualization of people or objects. Facial "changes," which appear to relate to the patient's basic dynamics, are seen clearly on the patient's face by the therapist and often on others' faces by the patient.

Furthermore—and this seems most difficult to understand—the mere observation of these changes, accompanied by occasional verbalizations and interpretation by the therapist, appears to help the patient understand himself better. One of the earliest LSD experimenters (3) calls this "running an individual back in time"; certainly faces from other countries, other races, and other times do appear.

The process seems to reveal symbolic meaning beyond our present theoretical understanding and to proceed by means of mechanisms which are only subject to speculation at the present time. Deeply repressed material is sometimes made available to both therapist and patient through this technique. Certainly projective mechanisms are involved—some directly projective, whereby the therapist sees the patient's unconscious projected on the patient's face; and some projective in the paranoid sense, in that the patient projects unacceptable material in himself onto the therapist and sees different, deeply buried aspects of himself there.

In the course of extensive therapeutic work with LSD and other psychedelics, this capacity to bring subliminal cues into awareness through facial changes has been found to be extremely valuable. Once a certain level of drug action has occurred in a patient, he also is able to perceive the face of the therapist or other members of the group differently. In his description of these changes, valuable material as to his psychic state is elicited. When the therapist is seen as a witch doctor, lack of trust or fear of magic is usually operating. Death masks, horrible monsters, primitive aborigines, seductive women, wise old crones, members of the family, etc. are often self-explanatory.

Occasionally a face appears which seems to pertain to the therapist or group member rather than to the patient. Discrimination can be learned, so that differentiation can be made between what is projected from the viewer and what belongs to the individual viewed. It is fascinating to note the high incidence of similar, usually identical, images which are seen independently by different observer-members of the group.

This capacity to allow subliminal cues to enter awareness, resulting in these apparent facial changes, can be employed without drugs. It can be learned, and has been found to be a very useful therapeutic technique. Human beings are evidently far better receptors or perceptors than has been recognized.

The author has observed that each patient appears to have his own repertoire of faces. Identification of these faces often aids in the understanding of the patient's dynamics with respect to critical but hitherto obscure problems. As problem areas are cleared up, certain faces or sequences of faces, no longer appear. What seems to happen is that eventually some aspect of the person which frightens or shames him will finally appear (murderer, devil, sadistic killer) and when the face is accepted - with equanimity and openness by the viewer—very real relief follows for the patient. Maybe the relief arises from the fact that no destructive action has followed the manifestation of the hidden horror; nor has he been rejected.

A variation of this type of non-verbal therapy is the placement of

two individuals, usually a man and a woman, in front of the patient with the request that he attempt to "fuse" the two. Fusion is usually the formation of a composite image; sometimes it is the extraction of a common denominator; sometimes one individual totally dominates the other. The ability to fuse seems related to the capacity to integrate disparate elements of the environment. This, too, can be learned, and seems to lead to a greater tolerance of seemingly irreconcilable incongruities in everyday life.

Within the last six months an additional technique has developed which is very difficult to describe; it really must be demonstrated. It has been found the most effective method of dealing with deeply buried, pathological character mechanisms which are recalcitrant to other forms of therapy. It also appears to be connected with the fact that individuals can carry "loads" for each other—the child being most commonly loaded because of his openness and innocence. The converse is also true: under certain circumstances individuals can help to carry or aid in the discharge of the emotional burdens of other human beings. Work with LSD appears to enhance these capacities. An understanding of these phenomena may well give insights into such obscure occurrences as "second sight," ESP, faith healing, the "laying on of hands," techniques of shamans or witch doctors, and other instances of unusual means of healing—some of which seem to parallel what appears capable of occurring with psychedelics.

In naming the new process, a word was borrowed from the past which unfortunately has acquired connotations of witchcraft and magic. (It is possible, of course, that magic is merely cause and effect of a different category than is understood at the moment.) So, for lack of a better word and with trepidation about past associations, the technique was named "exorcism." It is a combination of eyeballing, psychic containment, and special—usually symmetrical—placement of group members around the individual who is having the drug session.

Briefly, the patient, usually with an injection of 50 mg of i.m. Ritalin, is surrounded by at least four people: two on either side, one supporting from behind, and one doing the eyeballing or "exorcising" from the front —looking him directly in the eyes. With difficult cases individuals are placed on the diagonals, someone to support the supporter, and an individual perhaps standing over the patient. When the procedure occurs in the research group, an outer circle is formed of the rest of the group. All of this placement and the additional individuals involved seem to make more energy available for the process.

The "exorciser" eyeballs with the patient, the others sit quietly and steadily. At a signal, usually from the therapist who generally has the position of supporter, all "push" psychically. The patient has been instructed to draw himself together at the solar plexus, focusing his identity, and Usually, at the critical time, to focus all his hostility and violence behind his eyes and to "look" it out at the exorciser. There are generally several Psychic pushes, three to five, before the process is completed.

At this point, the observers-participators see immediate relief and change, much like that described in earlier techniques. The change seems

to be permanent, with increasing integration during the following three to six months. Those of us who have experienced an exorcism (and all of us have, including the therapist) feel that something important and definite has happened, and know exactly when it happened. However, it is impossible to describe what happened. When group members compare notes on what they saw or felt symbolically, it is discovered that the theme is much the same, with individual variations, and that a number of individuals have experienced the same occurrence.

Verbalizations during the process and subsequently are like reports of LSD fantasy, dreams, or creative symbolism; they make very little logical sense in ordinary psychiatric terminology. In the author's personal exorcism she appeared to be freed from the burden (racial? genetic?) of her father which had been imposed on her during an early molestation by her uncle, who lived with the family while having a "nervous breakdown."

The best the research group can do, in trying to recapitulate and describe it, is to say that exorcism appears to "lift" "loads" imposed on the child by other individuals during moments of stress—traumatic experiences, molestations, altered states of consciousness (as with high fever, anesthesia, dissociation, hypnotic states). There appears to be some connection with conditioned reflexes, those which are conditioned in at moments of trauma (great emotion, stress, altered states of consciousness). Speculation must be at the level of intuitive association because as yet there are no known physiological mechanisms which can be used as hypothetical foundations.

One of the research group, a young medical student, spoke of the initial stages of exorcism as "psychic surgery." It is as though there is an area of impingement of something alien (to the individual) in the brain. This spot is "excised" or "cauterized"; some kind of connection (perhaps a reverberating circuit) is loosened, and the alien element is forced out of the individual by the psychic pressure. It is as though the storage place for a complex of conditioned reflexes is ablated and the pattern of reflexes is released to disintegrate. All of this sounds like nonsense; perhaps it is. All we know is that the technique works, and works with startling effectiveness when nothing else does. It has replaced almost all other techniques for intractable problem areas.

An interesting aspect of these unusual therapeutic techniques is their non-verbal quality. The young girl of 19 doesn't know—or understand in any verbal sense—what happened to her in the physical containment session. None of us knows what happens in an exorcism. It is not necessary that something happened in our intellect for the procedure to be effective; it happened emotionally, which was sufficient for creative change.

Awareness of the meanings of events in an LSD or Ritalin session often emerges into consciousness after four to six months elapse. Some patients never do know, specifically and dynamically, and don't necessarily care. However, the lack of explanations can be frustrating for overly intellectual patients who have misused the "mind" in the service of retention of neurotic controls. But, conscious or not, changes resulting from LSD

sessions have been observed to occur up to a period of two years afterward.

It may be possible that verbal therapy—whether free associational, client-centered, or authoritarian—is, in some cases, the long way around; in others perhaps not the road at all. Words may be just the beginning of the game, and—as in courtship, for instance—irrelevant to the main purpose. The seat of emotional difficulty evidently is not the head; perhaps energy should not be wasted running messages through the mind if the energy can be beamed directly and more effectively at the solar plexis.

And why should the non-verbal be so frightening? After all, is there one among us who has not felt uplifted by the sight of a magnificent sunset—and who has not lost the feeling when an attempt was made to verbalize it? Great works of art and high moments of inspiration in the theatre often serve as a greater catharsis than hours on a therapist's couch. We are products of a highly logical, rational, and intellectual society, and these moments of emotional transcendence are isolated oases in the desert. We have not yet learned to control, to delineate, or even to sustain the non-verbal change which may occur on seeing the Elgin Marbles or the ceiling of the Sistine Chapel; we have not yet learned how to maintain the state of integration and transport we feel after seeing great Shakespeare, or that of lightness and joy after being part of a production of *My Fair Lady*.

Emotions appear to travel by way of the bridge of relationship; relationship is most meager when it exists from mind to mind through words. Is not a much more satisfactory bridge one which leaps from the heart of color in a painting straight into the solar plexus? Or one which can swing from the psyche straight through a forest into the cosmos? Perhaps the greatest of all bridges of relationship is one which makes a magnificent circle from hand to hand in a group and comes to rest as a transcendental experience in the individual.

We are in the pre-dawn of knowledge about the human mind and the universe. Because communication of knowledge occurs *through* the verbal, we must not make the mistake of assuming that it occurs *because* of the verbal. Nor are perception, knowledge—and wisdom—limited to the vehicle of the six senses. It appears that we are on the verge of a new dimension in consciousness—probably several dimensions. It is possible that psychopharmacology used in conjunction with therapy is one of the media by which the parameters of these new dimensions may be surveyed.

DISCUSSION

Dr. Pahnke: In your paper you say you no longer use LSD, but Ritalin. I wonder if you feel that Ritalin alone is just as effective as LSD?

Dr. Eisner: In the first place, it is operational. Secondly, I found that members from the research group who had gone through a personal analysis with drugs, and had remained with the research group,

actually liked LSD. In some cases there were some who could hardly tell the difference. It is quite extraordinary. I've said more about it in the body of my paper.

Dr. Dahlberg: I find this work very fascinating and quite stimulating. There are a few remarks I would like to make on the comments made earlier by Dr. Lilly and Dr. Hein on the importance of love. This has come up many times and I would like to refer to some of the previous literature on love. I refer particularly to one of Freud's greatest pupils in his later years, Ferenczi, who has written extensively about this, particularly about the problems of love, acceptance of love. Much of Dr. Eisner's work which is so extremely clever, and so well described, has flavor, and I think very good flavor, of some of the work of Reich and Reich's followers, in the kind of acting out, and the hollering, the violence, the fighting techniques that he used. I wonder about this question of the importance of verbalization and intellectualization. I have never been clear in my own mind as to what is important to understand about what has gone on in therapy. Certainly from the reports that patients have given me of what they understand, and what I understand, I am not at all sure that it is necessary. I just want to question what Dr. Eisner said about the use of words as being possibly the most meager way of relating.

Dr. Eisner: Dr. Dahlberg, I think it is very valuable if the patient understands; it makes it very nice in a computerless program at all levels. But I really feel that the change is the important thing. I think what we really try for is the feeling flow, the open feeling flow without barriers between human beings. This seems to occur at the solar plexus level rather than at the intellectual level.

Dr. Fremont-Smith: What kind of patients are you dealing with? We don't understand what kind of symptoms they had.

Dr. Eisner: Well, I have dealt with the whole spectrum. I will take any kind of patient, providing he wants to get well.

Dr. Fremont-Smith: Yes, but what kind of patients have you taken?

Dr. Eisner: As I said, the whole spectrum. I have a schizophrenic boy now in remission whom we are working with, people with negative character disorders, drug addicts, alcoholics.

Dr. Savage: I enjoyed this paper very much, and I quite agree with Dr. Eisner about the importance of the non-verbal techniques. I would raise the question: to what extent is motor discharge necessary? For example, one might regress with LSD to a point where hallucinatory experiences could be equally satisfactory and soul-satisfying as the actual motor discharge. One example occurs to me about an individual who under LSD had a fantasy that he was roasting his father over a slow fire in Hell and basting him with considerable delight. The question is, is it better to have a fantasy like that or actually t o . . . , I don't know whether you are equipped for acting out like that.

Dr. Eisner: Well, actually we do have patients who are capable of acting out fantasies. Obviously that is what we try to bring them to do

there. When you are dealing with character disorders, they have to act out.

Dr. Savage: I wonder if this is part of your expectation.

Dr. Eisner: No, they all don't do this. I am describing very difficult patients and the techniques used with them. Some of them lie there very quietly. Lately, I seem to have had a run of very difficult patients.

Dr. Ward: Your paper covers the question of hostility. What do you do about sexuality?

Dr. Eisner: I am very glad you brought that up because as Dr. Hein pointed out to me, I hadn't covered that adequately. Actually in the spitting technique, the sexuality comes up along with the hostility, and we try to separate it out so patients can discriminate and draw very clear lines. There is no sexual acting out in their therapeutic sessions. We try to guide these patients so that they have a proper discharge. Now this doesn't mean that there isn't much of the warm body contact. They sit on laps of group members and so forth, but there is no genital sex. I feel that it is very important for them to differentiate between sexuality and the flow of feeling, the sexual feeling which permeates so much, even in nature, and the particularly genitalized component which leads to intercourse.

Mrs. McCririck: I do agree with you. It is terribly important for the patient to be able to scream and shout, but I also feel that it is very necessary for him to be able to express his hostility for his parents. As a child, he was afraid to express it to the parents, and this fear is maintained unless he can overcome it with the help of the therapist and attach it to the parents and express the feeling that he had for his parents, which he was afraid to express in the beginning. I think that is also very important, as well as the screaming and shouting—that he must be able to feel for you!

Dr. Eisner: Whom do you think he is spitting at?

Mrs. McCririck: It's not done in the same way. It is rebellion, yes; but it is not saying, "I hate you." It is expressing it and attaching it.

Dr. Eisner: Oh, they come to that, but they can't at first. It is the same way with the motor discharge. Obviously, they get so that they finally can say, "I hate you." All of that comes out.

Dr. Fremont-Smith: In other words, the motor discharge is anticipatory for the verbal discharge?

Dr. Eisner: Sometimes they are accompanied, but I think temperament, flights of temperament, are terribly important here because there are some people who just have to express things through their muscles.

Dr. Buckman: I have discussed this many times with patients and found that a number of methods are useful for particular therapies. I agree with Dr. McCririck that finally words have to be used. Until and unless the patient has committed himself in words, there is no possibility of reality existing, for no matter how it is faced, we still have no measure of what his feelings are. He has to put his feelings into words and then get your reaction to them.

Dr. Eisner: I think we develop therapies with which we are most comfortable and which work for us. Concerning lack of words, I was thinking more of the physical containment. There was that girl (who was part psychopath) who never did get it into words. But we broke her suicidal depression, and the therapy was able to go on. With the hostility discharged, it always ends up in words specifically directed at me or whatever member of the group is standing in for father, mother or whoever it may be, even God. If it ends up with God, he hates God most of all.

Dr. Kramer: Actually, this is a question that has been raised by Dr. Savage. Darwin wrote a book entitled *The Expression of Motions of Man and Animals,* pointing out that we can't inhibit an impulse or an activity without counteracting it with another set of muscles to prevent the impulse for that movement from coming out. We are so used to talking about inhibition in a psychological way, that we forget the fact that it is impossible, as far as I know, to inhibit an action except by counteracting it with another set of neuromuscular coordinations. Freud made the same point. He said there could be no alleviation of symptoms and no cure of neurotic or compulsive obsessional states without the abreactive quality of the therapeutic situation. In the LSD-analytic type of treatment of the patient, there is a tremendous amount of abreactive quality to this relationship. I am wondering, too, where the psychedelic experience fits into this, because apparently in this, as far as I know (I wish that many people who know and who have watched this experience would tell me more about it), the psychedelic experience might fit. From what I am able to gather, there isn't the acting out in the psychedelic experience, yet it seems to be capable of promoting a change in personality. I think this is a very important theoretical point to raise for those working in this area.

Dr. Eisner: You are right. After working with this for so many years, I obviously prefer the psychedelic experience after one or two sessions. But I found with very sick people of a certain type, particularly character disorders, the best we can do is peel away the difficulties. Then they will have an experience on their own, and I found actually these experiences quite often occur outside of the drug situation. I really prefer it that way. They have it with nature; they have it in a love relationship with someone they are very close to. In this way there is no magic; there's no therapy involved; they have their mystic experience as a regular process of growth and maturity in the appropriate time of their own lives. Certainly the deep unconscious knows far better than I do as to timing.

Dr. Fremont-Smith: Dr. Kramer, I think there is some evidence that at certain levels of the central nervous system one train of impulses can inhibit another. I'm not sure that this is necessarily expressed in any neuromuscular determination or movement or counteraction.

Therapeutic Application of the Change in Consciousness Produced by Psycholytica (LSD, Psilocybin, etc.)

Randolf Alnaes, M.D. *

INTRODUCTION

In the discussion concerning LSD therapy at the fourth Scandinavian psychopharmacological meeting in Copenhagen (March, 1963), Johnsen (22) stressed the therapeutic importance of psychedelic experience. He mentioned that the patient becomes involved in existential problems as a consequence of the LSD experience—the meaning of life, the search for new values and a new orientation to life. Thus there appears not only the release of unconscious material in connection with personal conflicts (1, 14), but also experiences on the cosmic and archetypal level.

We can say that there are two principal methods in the use of psycholytic drugs (LSD, psilocybin, etc.): the "traditional" psychotherapeutic or psychoanalytic, and the psychedelic, each of which seems to have its special field of indication. With the latter kind of experience, one or two treatments may be sufficient. The patient then benefits from changes brought about by the direct "cathartic" effect of the experience itself, and less from the psychotherapeutic manipulations.

In the first approach, the patient receives psychoanalytical therapy concurrently and profits most from the psychotherapeutic effect on the personal level (22), rather than from the psychedelic experience. In the latter, psycholytic drugs are used to facilitate insight by the release of unconscious material on the archetypal or transcendental level.

Because the therapeutic use of the "biochemistry" of consciousness represents new directions in psychotherapy, some methodological problems regarding application of psycholytic drugs will be mentioned. These Problems especially concern analytic, integrative therapy which uses large doses to produce the psychedelic experience. It is stated that such ex-

* Lier Mental Hospital, Women's Department; Lier, Norway. Head: Ottas Lingjaerde.

periences can change the patient and his life in a relatively short time, without tedious, protracted, long term psychotherapy (11, 33, 41, 42).

Experiences at the Lier Mental Hospital, Women's Department

Since 1961 we have used LSD, psilocybin and the new shorter-acting substance CZ-74 (4-OH-dimethyltryptamine) as a help in the psychotherapy of neurosis. In 1962 a symposium, with Leuner, from Gottingen, as leader (4), took place at Lier Mental Hospital where some of our therapeutic problems were discussed.

Altogether, twenty patients with different forms of neurosis have been treated, especially with anxiety and compulsive neuroses, all of which had previously been treated unsuccessfully with different forms of therapy. Some of the cases had been hospitalized. Several had been treated psychoanalytically for a long time. Four patients were invalided by their symptoms, so that they were unable to work (6, 7). The psychotherapeutic part of our treatment has been analytically oriented in 10 of the patients. The main object here has been to work on the actual conflict (conflict-centered therapy) (25).

Twenty volunteers took part in experimental investigations which were carried out in conjunction with the new approach to test the method. Half of them were examined for physiological changes in the cortical functions and the other half were tested for the attainment of psychedelic experiences. Large doses of psilocybin and CZ-74 were given both intramuscularly and intravenously. In the latter group, there were six persons who had learned autogenic training (9) and had practiced this for two years.

The treatment of the patients took place partly under day-hospital out-patient conditions (32) and partly under in-patient conditions. In the "conventional" treatment with LSD from one to sixty individual sessions were given with oral doses ranging from 25 mcg to 500 mcg. The average psychotherapeutic dose has been between 100 to 200 mcg. In all, we have conducted 250 LSD sessions. Psilocybin was given partly orally and partly intramuscularly from 20 to 30 mg, as well as in combination with LSD and CZ-74, which was given intravenously from 20 to 50 mg alone or during an LSD experience. Ritalin intravenously was also used (30).

Each week, individual patients received psychotherapy the morning after the experience and again in a group the same afternoon. We discussed the experience derived from the "Psycholysis" and also paintings made by the patients. The groups were run according to Schindler s sociodynamic principles (5).

The intramuscular application seems to have a decided advantage, since the onset comes more quickly (within one to two minutes), with the result that the waiting period, which often strengthens the resistance, is reduced. This method uses the same therapeutic strategy as in intravenous insulin treatment, the patient being "taken by surprise," and the resistance broken down more easily. We start with high doses because a

gradual increase seems to be less helpful in producing the psychedelic experience; the patient, with the graduated method, learns to persist in maintaining control over the situation and thus resists successfully the potentials of the experience. We have also seen that some psychopaths with problems of self-assertion use the whole time fighting against the drug effect, trying to exhibit their superior strength.

Selection of Patients

This plays an important part. To the usual criteria employed in screening patients for psycholytic treatment (the form of neurosis, the exclusion of psychotic or pre-psychotic patients, ego-weakness, psycho-infantile and hysterical personalities, etc.), we have also added a so-called Experience-Inventory modified after the Inventory devised at Stanford University (44). This is a 60-item experimental questionnaire on subjective experiences presumably related to hypnotizability, which also gives an indication of the size of the psychedelic doses for LSD (between 300 mcg and 500 mcg) and for psilocybin (between 30 mg and 50 mg) (17). Also, information is obtained with regard to maturity and capacity for integration, ability to surrender to the psycholytic effect, trust in interpersonal relations, tolerance for regressive experiences, willingness to give up ego-control, rigidity, flexibility, etc., which play a great part in the confrontation with new, unknown experiences.

The Preparation

The administration of high doses for the production of psychedelic experiences implies a careful preparation. As an introduction, the psychic and somatic experiences that can be expected are described. The patients thereby avoid surprises that could perhaps frighten them unduly. The introduction is based on principles developed by Leary (26), taken from the "Tibetan Book of the Dead."

In the study of the LSD effect, Leary and his co-workers discovered that the psychedelic experiences described in this book could be similar to experiences produced by the drugs. The preparation which the Tibetans used before death, therefore, was used as a descriptive introduction to the psychedelic experience. The most important factor is full and complete surrender to the effect of the drug (surrender to death). A basic requirement for this is the previous establishment of a positive relationship of trust and good rapport with the patient, as well as preparation in group meetings. In order to acquaint the patient with the experiences that may arise (particularly those of dream-like, hallucinatory character), we have used the picture imagination technique (8). Autogenic training (9), or sometimes hypnosis with posthypnotic suggestions (2), has also been a good help, as well as the use of autogenic training during the experience. This has been necessary to avoid fear and negative reactions (the negative introverted state). Without such preparation, most patients would struggle against the effect and get only a frightening, psychotic reaction, more or less without therapeutic importance (although even in

these cases, insight has been acquired). This not only prevents the psychedelic experience but also might make the patient afraid to take further treatment. We therefore try to help the patient give up his own resistance and not waste time on an unproductive fight against the effect of the substance.

In preparing for the psychedelic experience, it is important that the patient direct himself in advance toward the experience he desires with regard to his basic conflict. Some possibilities are: philosophical insights (40); aesthetic appreciation (11); psychological qualities (10, 28). Indeed, a single, insight-giving experience may consist of a combination of many of these different levels.

The preparation, then, to guide the experience in the desired way, ought to follow the choice decided on in planning the setting with regard to music, pictures, flowers, candles. Such symbols can make the patient clear about the archetypal or universal meaning which seems to lie behind all human thoughts and feelings (23). Together with music, these symbols can contribute to the creation of a bridge between the previous conception of the ego and the new conception which will develop, based on the ego-loss experience, the acceptance of the ego and the understanding of deeper dimensions of reality.

The Different Levels

Blewett in the Canadian group (13, 31) has described six levels, and Sherwood in the American group (39) three levels of LSD experience. The plan of treatment is to bring the patient through the first levels to the last, where there is full and complete surrender to a deeper, more meaningful experience. This level seems to correspond to the first bardo level in Tibetan Buddhism (26).

The first level, up to the loss of ego, is accompanied by a series of psychosomatic symptoms such as clammy coldness, bodily pressure, a sense of the body disintegrating or being blown to atoms, and/or a feeling of tingling in the extremities, nausea, trembling, and vibrations. Just before the loss of the ego-feeling (ego-death), there occur phenomena called "wave energy flow" (often described as electricity), a feeling of biological "life-flow" and the appearance of ecstatic visions. At the time of the loss of ego a clear light is seen.

The second level is characterized by a feeling of separation between body and mind, accompanied by hallucinations—a constant changing panorama of light impressions, new experiences and visions, a feeling of atom explosions and "Sputnik"-like processes. The patient becomes a cosmonaut, immersed in mystical and magic-mythological experiences, with the appearance of archetypal figures as heroes and demons. It is an experience full of new realities in another world—in truth, a voyage into the vast inner space of the opening unconscious.

The third level is the event of "rebirth" and the coming back to the usual realities and "normal" ego-functions.

It is recommended that the patient remain as long as possible in the

intermediate, meditative level in order to profit as much as possible from the psychedelic experience.

This stage in the "psycholysis" corresponds to what Tibetan Buddhists call liberation (liberation from the "old" ego), which is necessary for new experiences and a successful "rebirth." If the patient is not able to attain ego-loss and remains fixed in hallucinations, this is an expression of resistance, and emotional support is necessary. This could include suggestions of surrender, encouragement to follow the light, "go with" the stream of experience, trust in the guide, follow the music, etc. In this connection we have used classical music—Brahms' *Requiem,* selections from Bach, Beethoven and others—and also modern jazz, such as Duke Ellington. It is also important to help with bodily support, for instance to hold the patient's hand. We further tell him to "give up" his own controlling consciousness, so that he ceases being too occupied in analyzing and intellectualizing his experiences. If one succeeds in this, the resistance will be broken down, the patient accepts his depersonalization and comes down to the meditative stage, characterized by quietude, peace and harmony. Tibetan Buddhists describe this condition as *samadhi;* some mystics (38, 40) as pure consciousness; many patients and volunteers as a condition beyond time and space, with the abolition of all boundaries, and a feeling of being one with the universe (15, 27, 33, 34, 41). It is a condition without content, consisting of "nothing," in which the patient feels extreme peace or bliss; he experiences a void, yet is not unconscious.

It should be mentioned that unless the therapist has had one or more psychedelic experiences of his own, he cannot properly prepare the patient psychologically, lead him through the Psycholysis or make a full use of the results afterwards, from a psychotherapeutic point of view. It is recommended that such training experience be undertaken with the personal guidance of an experienced LSD therapist.

During the third level, or "rebirth," when the patient is coming back to the realities and normal ego-functions, both suggestibility and memory are considerably increased; in this phase he is easily influenced by psychotherapy, and quite disposed to it. He also can have the advantage of deep thought, guided in a definite direction, concerning interpersonal relations, his attitude toward other people, to his own work, to special problems of a philosophical or psychological character, etc. This ought always to be decided on in advance, as consciousness under the Psycholysis is too weakly differentiated for the patient himself to choose directions. There are also different psychological methods to facilitate the rebirth if this should "hang up" (26).

In this period, when new trends and maturity in the personality are emerging and repressed wishes and needs are becoming conscious, we clearly see the convergence between the psychology of the East and the West. The lower animal and primitive instincts which are examined and described by Freud, for example, are parallel to a field of consciousness that is of special interest to Tantrism. It may happen, for instance, that the patient sees his mother and father in a sexual relationship to each other—corresponding to the "primal" scene in psychoanalysis, or other ex-

periences corresponding to the psychoanalytic theory about the Oedipus complex—eventually in symbolic expressions by archetypal figures.

On the whole, "rebirth" seems to be a period in the psycholysis where Jung's (23, 24) and Freud's (19) theories meet and pass into one another. The birth process itself, which starts it all and is the condition of it, is a theme which constantly repeats itself, either directly by the experience of going through a vagina or indirectly (symbolically), by passage through a narrow tube or a small cleft.

Under "the return," the patient has a greater capacity to analyze and to integrate the experience, to become clear about his life (discover himself anew) and at the same time see the possibility of a change. It can give him increased insight and clarity regarding his problems, help him find a new meaning in a more realistic style of life. Often the patient "re-lives" previous events in past years of his life, and abreacts affective psychotraumatic experiences all the way back to birth. Through this, a new conception of the reality may take place, based on new insight and acceptance of the ego. Experience of and contact with the cosmic consciousness (the so-called "peak" or reconstructive experiences) gives him new power and energy. It provides an increased capacity for genuine human relationships and the possibility of developing emotional contact.

Integration of the Experiences

This continues after the treatment, and it is an advantage if the first day is absolutely free from all the usual obligations, so that the patient can use the time to work on himself. Later, most patients continue to work on the material, which is of great importance for a stable therapeutic effect and the delayed positive influence (37) of the psychedelic experience.

The purpose of the psycholysis when used in this way is to find new meaning in life. Through this release of tensions, the patient is able to turn away from the old personality with its mechanisms of defenses and attain a greater inner freedom, with a changed view of himself. The psychedelic experience is aimed more directly at a change in the experience of values than ordinarily is expected to take place in psychotherapy.

Autogenic training, with or without music, after a time of treatment, has been a further help in the use of the psychedelic experience. It gives the patients and the volunteers the opportunity in meditation (25) to recall again (reconditioning) previous psycholytic experiences, to integrate the material further, and revive aesthetic and pleasant feelings.

Evaluation of the Change in Consciousness

For this purpose we prepared a special questionnaire. The purpose was to discover which patients received the most benefit from the psycholytic treatment with psychedelic doses, the psychopaths, the alcoholics, or patients with various neuroses; also whether or not there is a difference in the depth and character between the experiences of patients and those of normal volunteers.

It appears that there is not too much difference, that to a great degree this is dependent on the preparation and the intentions of the patient. We have had many patients who previously had received several LSD treatments in large doses, but only after the described preparation did they have psychedelic experiences. On the other hand, there are patients who immediately achieve such experiences without preparation, and with good therapeutic effect. Patients who have had only a "partial" psycholytic experience without transcending the ego (as with many compulsive neurotics, for instance) do not get the same feeling of increased energy and remain fixed in their own experiences without progressing.

Patients who attain contact with "pure consciousness" need only a few treatments and do not become as involved with their own problems. We have the impression that the unconscious "takes over" after the treatment and continues to work by itself with this more direct method.

The Psycholytic Effect

In conclusion, it should be emphasized that it is not only the drugs in themselves that are therapeutic. There is no special reaction, whether somatic or psychic. The psychedelic effect is quite dependent on the therapeutic setting, the patient's personality and expectations, as well as the preparation and surroundings. Many are of the opinion, especially among the neurophysiologists (36, 43), that the psychological process itself is due to a sort of sensory deprivation, a psychological "shock" with total change of the perception. In our biochemical examinations (6, 7) we have pointed out, as has been reported at Fredriksberg Hospital (20), an increase in the plasma Cortisol level. This may be thought to interfere in the central nervous processes, especially the conditioned reactions, in a way that facilitates extinction and reconditioning of behavior, a sort of positive form of "brain-washing," when conducted in a therapeutic way.

In this connection, it should be mentioned that under conditions of regression we have tried to contrast traumatic childhood experiences (through abreaction) with meaningfully pleasant experiences, those with flowers and music for instance. The intention has been inhibition or extinction of unfortunate conditioned reactions (patterns of behavior); and to facilitate the conditioning of new reactions by exposure to positive values in order to gain a new attitude toward life ("reciprocal inhibition"). This conditioning can be reinforced by further sessions (45).

A question of great practical value is this: what meaning has the application of the "biochemistry" of consciousness with psychedelics in relation to the more direct use of psychotherapeutic procedures under psycholytic treatment?—for instance, the use of long-continued analytic technique (Leuner) (28, 29).

It is tempting to ask if it is possible by means of psychedelic experiences to shorten the time consuming, psychoanalytic LSD treatment, which involves revival of childhood and passage through the different Oedipal phases.

Contrasted with the cosmic experiences and the understanding of a deeper reality and meaning in life, many analytic problems seem a

trifle. Patients who have gone through analysis come face to face with the universe and the higher "powers" and manage to look at their own problems from a distance after a psychedelic experience. It gives them a greater survey and perspective in life (41, 42). The treatment seems to be most effective with patients between the ages of thirty-five and forty-five, which corresponds with the best time for a Jung analysis. This is particularly noticeable in patients who have lost their style of life, or are in a vacuum-situation. Frankl (18) describes so-called neurosis of emptiness, where symptoms in the form of depression, anxiety, compulsion, abuse of alcohol, etc. are direct presentation symptoms. Patients of this type, for whom old ideals have lost their value, seem to be in need of a new start, a new orientation in life.

After our experiments, we can conclude that a therapeutic application of the "biochemistry" of consciousness in clinical and ambulant treatment, in accordance with the given direction, seems to offer good opportunities for rational use of the therapeutic potentials which psycholytic drugs provide.

SUMMARY

This paper deals with methodical problems in connection with "psycholytic" therapy, with regard to the psychedelic (mind-opening) experience. It is based on experiments with volunteers, as well as treatment of 20 neurotic patients who received approximately 250 sessions. The importance of preparation and the introduction given to the patient is stressed. The different levels and types of psychedelic experience (loss of ego, the hallucinatory plane, and "rebirth") are compared with the bardo-stages of consciousness described in Tibetan Buddhism.

Guidance during the "psychedelic voyage," psychotherapeutic technique, the use of autogenic training, and the administration of drugs, starting with large doses, are discussed. The therapeutic value of the transcendental experience as a meaningful and mind-manifesting experience is compared to the psychotherapeutic insight into personal problems facilitated through the psychedelic substances (LSD, psilocybin and CZ 74).

The therapeutic use of the "biochemistry" of consciousness by means of the psychedelic experience as a time saving form of psychotherapy is emphasized.

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Dimensions in Psychotherapy

G. W. Arendsen Hein, M.D., L.L.D. *

In counseling or in supportive therapy we are in the horizontal plane of the "here and now" situation, dealing with the patient's conscious perception of relationships with himself and his world. We try to follow his individual line, picking up some historical data along the road, which may appear to have an important bearing on the present developments. In the meantime, we become informed about his ideas and relationships regarding other people, thus exploring: first, man vs. himself; second, man vs. his fellow men. These are the dimensions of his existence.

When we aim at depth therapy, we enter the vertical plane; we try to uncover and understand the personal and archetypal symbols of the unconscious, and become engaged in what may be called the third dimension of his existence.

These three dimensions form our common frame of reference in our therapeutic approach to intrapsychic and social conflicts. However, after much trial and error, we have learned that our tedious analytic efforts to make conscious what has been unconscious, sometimes seem to contribute more to the clarification of the psychoanalyst than to change in the patient. The process, after some time, may inspire the patient to learn our language and to express himself in appropriate terms, but we are all familiar with the analytically well-educated patient, who knows perfectly how to behave in the therapeutic session and in spite of an analysis of long standing, has remained a cripple in real life. In my opinion the truth is that intellectual knowledge only contributes to change provided it is intertwined with emotional experience. So the patient must become emotionally involved. We have learned that the most important tool of psychotherapy consists in the affective relationship with the therapist.

This is a more comprehensive concept than transference, which covers only a special aspect of the total interaction between two human beings, both fully engaged with and responsive to each other. It is clear that this interaction is not limited to the conscious level. Participation (though alert to what is going on) of the total personality of the therapist is as necessary as it is on the part of the patient. The task of the therapist is one of piloting this interaction. The patient then gradually dis-

* Medical Director, Foundation Stichting, Veluweland Hospital, Ederveen, Holland.

covers new modalities of perceiving human contact. He becomes disentangled from rigid patterns of reaction and experiences a new truth in his relationship towards another human being.

Proof of the fact that not only the conscious layers of the patient's personality participate in this process, is found in such evidence as change of dream symbols and increased capacity and intensity of creative expression. A wider scale of values comes within reach.

We like to emphasize the important fact (perhaps quite unnecessarily in this country, but certainly not in Europe) that—contrary to widespread superstition—research and experience have shown that "schools," methods, content of interpretation are not decisive for positive results. It is the quality of the relationship between the therapist and the patient that is decisive, provided that they have access to a common frame of reference which is meaningful to both.

Now, as to the aims of our therapy—how do we define positive results or cures? Is it restitution of physical and social functioning, improved adaptation to conflictual situations, a more realistic attitude toward life in general, increased capacity to deal with emotions? Do these concepts cover the total human being? Have we included all dimensions of his existence? From the current frame of reference in our profession, one would be inclined to agree perhaps, but on the other hand experience teaches us that many people who are able to meet the above criteria to a reasonable extent do not really enjoy life nor do they find the inner peace or happiness they are longing for. Apparently these modes of being require more than a successful adaptation to the claims of society. What then is lacking in our concepts of the human personality? I would like to quote an example from Diirckheim (6) to clarify this question. He refers to an average type of man, John Smith, or any one of us. Mr. Smith is that part of our personality, which he calls the empirical character, more or less determined by hereditary capacities and gifts, circumstances in childhood, educational and social influences, successes and failures in life, in short, the person that we are, as far as we can say—the result of worldly conditions, within our time and space.

> "When we are talking of ourselves or meeting each other in social life, we are only identified with this personality and its position in the world. John, on the contrary, stands for the unconditioned essence or our true self, our essential individuality, rooted in a reality beyond time and space. The central problem is now: how can Mr. Smith realise that permeability, which will make it possible for John to reveal and to manifest the unconditioned reality of his innermost individuality within the conditioned structure of Mr. Smith? The realisation of this state of mind—wherein the unconditioned reality becomes visible in our life, in our way of feeling, of acting, of loving—is what we call maturity. Since John stands for the divine reality in ourselves, the fruit of John Smith's spiritual growth and maturity would be the revelation of the divine, incorporated by John in the world of the Smiths. But mankind's position today is that the presence of divine life in John is suffocated by the man-made world of the Smiths. Therefore the lack of maturity

> is the problem of mankind today, the cause of failures in public life as well of the deepest suffering of the individual."

Similar ideas, related to Zen-Buddhism, are expressed by Fromm (9) when he refers to the "split within myself, between the universal man and the social man," and the "experience of separatedness" as making man suffer. Apparently, man is intuitively aware of his existential problem, the discrepancy between his actual self and his deeper self. When one is to achieve freedom from anxiety and insecurity, Fromm points out, our aim of curing a neurosis has to become enlarged; it must "become part of a wider humanistic frame of reference" (finding union within ourselves, with our fellowmen, with nature).

Zen philosophy doubtless has very inspiring ideas to offer to the psychotherapist, regarding the nature of man and the necessity of his ultimate transformation. However, the methods employed to reach the goal (enlightened state of creative relatedness; Satori) seem unworkable for western man. The goal itself does not meet the religious need rooted in the soil of his Christian culture and cannot be adequately expressed in words. Suzuki (19), a well known authority on Zen, says that it is "an experience which no amount of explanation and argument can make communicable to others, unless the latter themselves had it previously."

What do we learn from LSD experiences in this context? After five years of experience, I am thoroughly convinced that LSD is a most valuable agent. When LSD is properly used, the therapeutic process has far more depth. Strong resistances that seemed to make some people inaccessible to treatment (4) in the past, are now accessible in many cases. Material comes up for treatment that otherwise would never have come within reach with other methods. The high emotional level of experience makes the material meaningful for the patient. We have seen a number of patients, who most probably would have remained either lifelong emotional cripples or chronically recidivous criminals (3), who now are on their way to mental health, thanks to LSD, functioning well for years with average social success, and further engaged in a process of growth that may lead eventually to full maturity.

But there is more. LSD has added a very essential element to our psychotherapeutic arsenal.

> It is a significant fact, which, I think, cannot be explained rationally, that in the course of the development of mankind, new sources of energy have been discovered when the older ones either were about to become exhausted in the near future, or were unable to meet the requirement of a certain period to come. At last, physicists found nuclear energy, a source of which man was completely unaware, hidden in the simplest particles of matter. It seems tempting to make a comparison.
>
> Is man of the 20th century now beginning to discover, that in spite of his rationalistic and technical achievements, these sources prove to be inadequate to meet his deeper spiritual needs; that he only finds peace and harmony when he transcends the ego-boundaries

and becomes aware that the most elementary source of power, love etc., is not in himself but in his oneness with God's universe? (8)"

Have not most of us been living in a state of complete unawareness of our roots in the transcendental, until we saw this clearly under the influence of LSD? We might call this underdeveloped area our cosmic or universal unconscious.

There is the fourth dimension of human existence, a divine reality beyond time and space, beyond life and death, beyond thou and I, beyond all the antagonisms that puzzle the human mind, where man discovers the origin of his true self, his essential being. There he finds joy, faith, love, strength—whatever he needs, independent of the worldly position of his ego. When the claims of the ego are given up, man becomes enlightened and open to his participation in greater life. This kind of experience also provides the patient with a totally different outlook and attitude toward himself and life in general. This experience contributes further to a change in our concept of the human being. Seen *sub specie aeternitatis,* the true self is a spiritual immortal being on his way to fulfillment of a consciously unknown destiny. At birth he appears equipped with certain personal potentials (physical, psychological) under certain social conditions. He is going to play his role, as if life were a training-school, where obstacles are the necessary means for the process of spiritual growth. By struggling with these obstacles, it seems that he has to clear the way for the realisation of his true self (salvation). When we look at man from this point of view, it is postulated that the true self of the human being is not really affected by the neurotic distortions in the superstructure, although the true self may be imprisoned and its creativity tied up.

A further consequence of this concept of man is that we psychotherapists, not knowing the deeper core of man's personality or his ultimate destiny, cannot pretend to help him basically in this sense. Nevertheless we assist him to function better in his role and discover the true self which becomes visible when the neurotic disguise is removed. Our medical task is then to prepare him to the extent that he becomes aware of the deeper longings of his true self and that a serious wish may emerge to remove the obstacles for a breakthrough towards greater life.

One could also describe this process (of man working out his own salvation) in terms of development of consciousness, in the sense of a subjective state of awareness. After the moment in his early childhood when his ego begins to awaken with the capacity for rational thinking, he starts making his own choices and begins to assume responsibility for the consequences. This state of development is characterized by a centrifugal movement with predominantly ego-directed goals with a limited field of action, away from his transcendental origin, concentrated on the interests and achievements of the ego. In his struggle for life, his fellowman then becomes a competitor, the world a menace.

When he continues in that direction, man comes into a spiral movement ending in a blind alley, where his "separatedness" becomes more

and more accentuated, and "where he loses sight of his participation in greater life" (6).

When man begins to realise, after much suffering, that he is alienated from himself and the common source of all Being, a new phase may start with a centripetal movement, with socially directed goals. These goals promote expansion, more essential self-realisation and creative action in the individual. In quest of the meaning of life, he goes on the way of universally directed goals, in which man gradually loses his ego, to rediscover his transcendental origin and recover eventually the spiritual reality from his rationalistic, materialistic pattern of life, so that this reality may manifest itself in his world. To realise this, man has to become open-minded to the essentials of every situation in life. It requires an unobstructed, non-fictitious sense of reality (characterised as trans-egoistic, trans-materialistic and trans-idealistic) and the willingness to relate fully and adequately to any thing or any person.

In our capacity of perceiving and experiencing, we are seriously handicapped by our individual, social and cultural determinants. Encrusted as we are with prejudices, perception can only become conscious experience in so far as it can penetrate this crust or fit into our conceptional categories, which work as a selective filter (9). Only a very strong inner motivation can conquer the inhibitory forces of conformism and convention. Nevertheless, man feels the gap existing between what he outwardly is and what he is meant to be, according to the urge within for meaningful living. Man wants to render an account of the meaning and purpose of his life. He is fully alive to the importance of this question, because he has an inner need for religious or cosmic integration.

Of course, different needs appear in different periods of general history and individual life and with varying force. During the last 25 years, social relationships have been getting increased attention, while during the previous period there was more concernment with the individual development. If the signs do not fail, the universal man and world-citizen is already in the making.

During the first period of life, the accent is on self-realisation. Later on, social participation and religious integration appear. But when the day comes that the latter need becomes strong and a serious problem, man finds himself in an existential crisis which cannot be resolved with the current psychotherapeutic methods, because they all have a too narrow concept of man (7).

Freudian, Adlerian and Jungian schools deal with the instinctual, social and creative aspects of the human being, but not with the spiritual man in the perspective of his divine origin. Although we want to give full credit to the fact that the latter two schools gave evidence of their awareness of a wider scope of the realm (Adler describing his social feeling as developing towards a cosmic feeling, and Jung referring to the collective unconscious as a trans-subjective source of creativity), the aim of all depth-therapy is the cure of illnesses and symptoms. Our experiences with LSD make it clear, that this is too limited an aim. The aim of psychotherapy and the task of the therapist have to be supplemented accordingly.

Apart from the syndromes of instinctual and social deprivation, we recognise the symptoms of spiritual deprivation. Man, craving to grasp the significance in the whole of existence, can only be satisfied when his separatedness as creature is resolved and contact with the Creator is re-established. We see that man only becomes "whole" when, apart from his social integration, he experiences and works out in practice a significant God-relatedness.

Here I think LSD therapists have an important contribution to make to the current practice of our profession, because it now seems clear to me that it is part of our task to enlarge our therapeutic activities as follows:

When examining the patient, to explore not only his personal and social relations, but also his relationship toward God and religion, and to discuss the related pathology that may be present in the patient's concepts (anxiety related to punishing father imago, being lost forever, predestination, hell, unforgivable sin etc.); to help the patient become aware of the fourth dimension of his existence, that is the transformation of the universal part of his unconscious into consciousness.

Of course the transcendental reality cannot be conceptualised; it has to be experienced personally in its concrete presence. This happens in the psychedelic experience. When we regard psychotherapy as a learning process, we seem to be able to learn on four different levels:

1. *On the instinctual level:* Under certain conditions the formation of a conditioned reflex results by means of repeated stimuli. Here, the process of learning is conditioned by the repeated experience.
2. *On the operational level:* learning consists in a process of trial and error as one hits upon certain constellations that produce rewarding results either by chance or by systematic investigation on an empirical basis.
3. *On the emotional-interaction level:* learning, either by chance or by controlled human interaction, consists here in the corrective experience. A new experience, acquired under the influence of an old emotion, leads to correction.
4. *On the inspirational level:* learning consists here in revelation and the experience leads to inspiration and transformation.

LSD affects the last two levels and brings the latter source of learning, the psychedelic experience with its overwhelming inspiring power, within therapeutic reach. It has made a new dimension of psychotherapy accessible and facilitates multi-dimensional integration.

In conclusion, I should like to put forward some questions for discussion:

1. Does it belong explicitly to the task of the psychotherapist to deal with the fourth dimension of the human being, i.e., to explore it systematically and to give full scope to its development by preparing him for the psychedelic experience?
2. If so, is each patient suitable for this process or not? Which indica-

tions and contraindications can we stipulate, related to our usual diagnostic categories?

3. Assuming that a considerable time of very careful preparation is devoted to the patient and a warm positive personal relationship has developed with the therapist—who must be acquainted with the transcendental from his own experience—which factors have to be considered in order to choose the right moment?

It would be plausible to suppose that it would be beneficial for the patient to work through the majority of his personal problems first, as we see him at work in most of the sessions with lower dosages. However, from the communications of those who work with a one-large-dose technique, one is led to the conclusion that such a preparatory period of working through is not necessary. Düirckheim, referring to transcendental experience provoked not by drugs but by Zen methods, states:

> Experience has shown that the most varied forms of neuroses are cured as soon as man succeeds in breaking through to his innermost being and detects a new swing of life, realises his state of mind and body that enables him to live his life in the world, according to the demands of his real self.
>
> Jackson, quoted by Cohen (5), referring to "an existential encounter of decisive proportions," says that this can be followed by "re-alignment of the perceptual set and can lead to character restructuring."

Van Dusen, quoted by Pahnke (16), states:

> There is a central human experience, which alters all other experiences.... not just an experience among others, but rather the very heart of human experience. It is the center that gives understanding to the whole. Once found, life is altered because the very root of human identity has been deepened.

Thus experience seems to indicate that one very strong emotional event sometimes succeeds in doing away with conditioned patterns of behavior. (It was reported that Pavlov's dogs, after being exposed to a frightening inundation of the cellar where they were kept, unlearned their conditioned reflex.) Different authors state that this happens when the individual has matured so far that he is able to benefit from this experience to the full extent, and people in his direct surroundings support him and believe in him. Very impressive changes can take place and under favorable conditions prove to be definite. Others warn against the honeymoon" effect of such experiences, and seem doubtful as to their stability. Sudden transformation may be a new form of resistance. My personal impression is that the transcendental experience has its greatest value as the climax of a longer development, through which a greater sounding board is acquired. Pastoral and psychotherapeutic after-care to avoid a too presumptuous attitude is required.

The remaining questions are:

4. Which methods and aids have yielded positive results in conquering the very strong resistance to surrender which we encounter in certain patients with a rigid character structure?
5. Has anyone observed cultural c.q. racial determinants in the shaping and content of the transcendental experience? Or, is the striking similarity of mystical experiences, reported from different cultures in different times, also confirmed by the LSD state?

SUMMARY

Dimensions in psychotherapy are described as follows:

The first dimension regards the patient as an individual being, his relationship with himself and his intra-psychic problems.

The second dimension regards the patient as a social being, his relationships with his fellowmen and with society, as well as the related social problems.

The third dimension deals with the patient against the background of his emotional development, including material from the personal and collective unconscious.

The fourth dimension regards the patient's essential being, his relationships with the transcendental reality, irrespective of neurotic distortions in the superstructure of his personality. Psychotherapy has to deal here with existential conflicts, arising from the discrepancy between the patient's actual state of being, largely determined by influences of the external world, and what he has to realise according to his inner urge for authenticity.

The aims of Zen-Buddhism are discussed in this context. Psychedelic experiences with LSD indicate that our three-dimensional model of man is too limited a concept, that the spiritual aspect must be added when we want to deal with the "whole" man.

It is stressed that the psychotherapist cannot pretend to influence the true self in any way. He can, however, assist the patient to function better; help him to remove the obstacles that his neurotic attitudes impose on him; help him also to become aware of his deeper needs. The process of spiritual growth is described in terms of development of consciousness, different goals being set in different stages of development.

The learning process, of which psychotherapy is considered an example, is briefly summarised to make clear on which levels LSD has its strongest influence, promoting a multi-dimensional integration. In view of the widespread syndrome of spiritual deprivation, it is proposed that the new dimension be added to psychotherapy.

Psychotherapy with LSD: Pro and Con

Sidney Cohen, M.D. *

One of the not always dispassionate dialogues about LSD concerns its place in psychotherapy. The very forceful opinions range from a complete denial that a drug of this sort could have any usefulness to the bald statement that it induces miraculous cures.

In order to make some sense out of the contradictory and confusing claims, it would be well to consider first what psychotherapy is and then what its goals are. These matters are neither simple nor generally agreed upon, and part of the confusion stems from difficulty of definitions.

At the outset it can be asserted with a reasonable degree of confidence that psychotherapy is a learning process. It is the learning of new attitudes, new feelings and new behavior. This is a fair but overgeneralized description. The reason why most people seek psychotherapeutic help is because they finally realize that their present ways of living are distressing, ineffective or damaging. Their existing patterns of thinking, feeling and responding are the result of poor habits—maladaptive acquisitions of a lifetime.

Generally we learn in order to gratify some need or to avoid unpleasure. But our innate curiosity, the process of growth and cultural influences are also goads to the acquisition of new sequences of behavior. We seem to learn in two ways: by conditioning and by cognition. Some of our basic patterns are acquired by repetitive responses to stimuli associated with either a reward or punishment. If rewarded, the response is reinforced; if punished, it tends to be extinguished. Eventually, conditioning occurs, and the learned response becomes a part of our established psychological and physiological reaction pattern. Cognitive learning develops without conditioning and can result from single rather than from multiple events. The alternatives may be understood and the best response may be conceptualized rather than learned by trial and error. Cognitive learning can also be acquired by imitation; speech and other skills are mastered in this fashion.

The psychotherapeutic dilemma is how to get the patient to abandon the ingrained patterns for others which are more effective and mature.

* Chief, Psychosomatic Medicine, Veterans Administration Hospital, Los Angeles.

Neurotic patterns are especially resistant to extinction because, despite their discomfort, they seem to gratify some need of the patient. Such advocates of therapeutic conditioning as Skinner insist that retraining is a matter of repetition and reinforcement of proper stimuli which invoke the desired response until it becomes habitual. The Freudians claim that new emotional and cognitive insights are necessary before change can occur. At one time the recovery of repressed childhood conflicts and the emotional abreaction to them was thought to be the crucial factor. Later the "working through" of the patient's resistances and of his disturbed key relationships became the central issue.

Insight can be understood as the sense made by the therapist and the patient out of the obscure patchwork of words which the patient expresses. Some of the material is his life story, some of the fabric are dreams, free associations and other fantasy material. The nature of the insight will vary according to the mold the psychotherapist uses to formulate the material. Judd Marmor believes that although the explanation given by different therapists will vary, each interpretation has a definite relationship to the life pattern of the patient. A Freudian may express it in terms of unresolved Oedipal complexes, a Jungian will speak of archetypes, a Rankian of separation anxiety, and a Sullivanian of oral dynamisms. Marmor's point is that they are all structuring the data in their own terminology, but that a common core of reality underlies each of the explanations.

The value of the therapist's formulations can be looked upon more nihilistically. Any explanation of the patient's problems, if firmly believed by both the therapist and the patient, constitutes insight or is as useful as insight. It is the faith, not the validity, that counts. It is curious how under LSD the fondest theories of the therapist are confirmed by his patient. Freudian symbols come out of the mouths of patients with Freudian analysts. Those who have Jungian therapists deal with the collective unconscious and with archetypal images. The patient senses the frame of reference to be employed, and his associations and dreams are molded to it. Therefore the validity of any school of healing should not be based upon productions of the patient—especially LSD patients.

Intellectual insight is not as highly thought of as emotional insight. The latter is accompanied by an abreaction, or discharge, of emotion after the validity of the insight has been accepted. During this period of emotional turbulence the patient is supposed to be more amenable to change. If the patient "discovers" the insight with only a subtle assist from the therapist, so much the better. It is easy to see how new knowledge about the onset of neurotic behavior will be a fine opportunity to begin to alter it. But insight alone is not ordinarily enough to do the job. A repetitious, sometimes prolonged, re-learning process must be instituted. Otherwise the patient backslides into the old habits.

Eventually the therapist becomes a highly significant figure to the patient. His notions of what is good and desirable tend to be adopted by the patient, and the therapist's overt or covert expressions of approval or disapproval come to constitute reward or punishment. Greater success in dealing with the immediate problems met with outside the therapist's

office is another source of reward which keeps the patient learning the more adaptive responses. More important than any other single factor is the relationship that develops between the patient and his therapist. Relearning occurs best in an atmosphere of trust and faith. When the patient sees the therapist as understanding, considerate and devoted, he is willing to begin the hurtful process of changing.

From what has been said, it can be deduced that insight into the devious behavior or the conflict underlying it may be necessary for therapeutic change to occur. It may be unnecessary, but it motivates the patient to work harder at his reconstruction. When someone has lived through decades of defective relationships and inconsistent communications with the important people in his life, this can be no simple or brief matter. Marmor states, "There is no substitute for the time-consuming process of patiently re-educating the patient concerning the nature of his perceptual, emotional, symbolic, and behavioral distortions, and enabling him by the working through process, to generalize and apply his increased understanding to many different life situations." (1)

A thoroughgoing personality reconstruction is the aim of some schools of therapy, such as the classical psychoanalysts. Others—the behaviorists, for example—are content with relief of symptoms. Analysts will claim that to relieve one symptom, such as hysterical blindness, will only lead to a substitute symptom; it is the buried conflict that must be resolved or its pressure will break out in new symptoms. The behaviourist reply that symptom substitution practically never occurs and that once the disability has been alleviated, further improvement in the emotional and perceptual distortions can accrue. The rapid removal of psychic symptoms, such as stuttering and enuresis, need not lead to the formation of new difficulties. If the loss of the symptom helps the patient adjust better, or if the need to retain the symptom is past, the substitution of other symptoms need not develop. One of the charges against LSD-type therapy is that it only relieves symptoms and does not alter the character structure. This is often true, but it need not be.

Since LSD therapy is often brief, it would be helpful to know whether rapid personality change can actually occur. When Pavlov's conditioned dogs were caged in a cellar that flooded one night, that single stressful exposure was so shaking that much of their conditioned learning was lost. In humans these stressful occurrences, during therapy or otherwise, have been called corrective emotional experiences. Behavioral and personality reshuffling has taken place following a momentous personal event. If it occurs at a time when the individual is psychologically ready to change, the personality realignment is dramatic and persisting.

It seems that intense and impressive psychic experiences make possible the sudden unlearning of ineffective ways of performing. After that, more satisfactory or more mature methods of functioning can be learned at an accelerated rate, perhaps even without outside help. This is far from invariable; most people will tend to slip back into the old, implanted habits. Rapid personality change is a possibility, but the hope for it exceeds its incidence.

If a question remains as to quick changes in ego structure, we know

that rapid superego alterations are quite attainable. Some of the more malignant emotional disorders of which patients complain are due to the excessive punishments their rigid and overstrict consciences mete out. Over and above what might be called appropriate guilt and shame, many patients belabor themselves with massive self-condemnation, which often evolves into a serious depression. Unjustified feelings of failure, constant self-depreciation or inordinately high standards lead to much unnecessary suffering. Unreasonable fears—for example, the earlier myth that masturbation led to madness—have marred many lives unnecessarily. These are quite readily amenable to re-education, especially during periods of nervous system arousal, as during the LSD state. Their resolution can be sudden when the extraordinary experience allows the patient a new look at his old values.

The various goals of psychotherapy are pertinent background information to assay LSD's role in psychotherapy. Naturally these will vary widely from person to person, according to his needs and his capacity to change. The following list of desirable aims which are generally agreed to be in the direction of personality growth are not given in order of importance.

1. The relief of distressing psychic or psychosomatic symptoms.
2. A reduction of neurotic anxiety with a retention of "realistic anxiety."
3. Personal feelings of worth, meaning and hope.
4. Feelings of self-fulfillment in work or other activities.
5. The ability to express "healthy" aggression in an acceptable manner.
6. A high level of functioning commensurate with one's capabilities.
7. The capacity to know oneself without too much distortion. This requires that one's defensiveness not be excessive.
8. The capacity to enjoy the physiological pleasures.
9. Flexibility and adaptability to life stress; the capacity to endure, or, when necessary, to compromise.
10. Low levels of stereotypy in thought content.
11. An appropriate sense of responsibility.
12. A capacity to love and be loved.
13. A satisfactory relationship to authority; the acceptance of good or necessary authority; the willingness to struggle against bad authority realistically.
14. An ability to tolerate ambiguity and dissonance in the environment.
15. An awareness of the immediate and distant situation.
16. Sensitivity to the needs, feelings and thoughts of others.
17. The ability to see oneself and one's culture with a measure of humor.

Naturally all these desirable objectives are never completely achieved. We spend a lifetime, with or without professional assistance, moving toward and away from maturity. The difficulties of evaluating the goals of psychotherapy are evident. They are intangible, shift with cultural movements and can be measured only crudely with the devices now available.

Some comparisons between brainwashing and psychotherapy techniques may be instructive. There are interesting parallels which have implications for our interest in LSD therapy. Brainwashing can be defined as an effort to rapidly change thinking and behavior to conform to a specific political value system. Its practitioners believe that it is justified since it is good for their system. A variety of practices are employed, many of them direct and harsh—exhortation, reward and punishment techniques, sensory, sleep or social impoverishment, persuasion, and the like. It is edifying to learn that strong emotional discharges for or against the political system are provoked and encouraged. In this period of excitation, suggestibility is heightened and established beliefs are more easily destroyed. New tenets, even beliefs opposite to those originally held, can be inculcated. Modern brainwashing methods depend less on physical violence and more on fomenting confusion, intense anxiety and on mobilizing guilt feelings. During the chaotic emotional state the introduction of false memories and ideas is possible, and they become fixed through repeated indoctrination. The victim is provided with an entirely new assumptive set.

It surprises people to read about an obviously absurd "confession" from a strong-willed prisoner after his confinement in some totalitarian jail. At the "trial" he does not appear to be under the influence of drugs or in any particular fear for his life. Even if he is released and deported, the instilled beliefs linger on for a time. The success of persuasion, hyperemotional abreactions and conditioning in revising long-held beliefs is impressive. It is a weird demonstration of the fact that attitudes can change and can change rapidly.

Psychotherapy, in contrast, is an effort to change attitudes and behavior in a direction which is good for the patient and permits him to live more successfully according to the value system of his culture as interpreted by his therapist. It has developed more indirect and subtle techniques—suggestion, insight, counseling, abreaction, the transference relationship, and the like. Both techniques employ suggestion to achieve their goal, especially during the abreaction, which is recognized as a hypersuggestible period.

From what has been said to this point, the question whether drugs like LSD could favorably influence the psychotherapeutic process can be split into two parts. First, can it accelerate learning? Second, may it provide a basis for rapid personality change by providing a profound emotional experience?

When the hallucinogens are used within the framework of conventional psychotherapy their proponents make the following claims:

1. They reduce the patient's defensiveness and allow repressed

memories and conflictual material to come forth. The recall of these events is improved and the abreaction is intense.

2. The emerging material is better understood because the patient sees the conflict as a visual image or in vivid visual symbols. It is accepted without being overwhelming because the detached state of awareness makes the emerging guilt feelings less devastating.

3. The patient feels closer to the therapist and it is easier for him to express his irrational feelings.

4. Alertness is not impaired and insights are retained after the drug has worn off.

Under skilled treatment procedures, the hallucinogens do seem to produce these effects and one more which is not often mentioned. That is a marked heightening of the patient's suggestibility. Put in another way, the judgmental attitude of the patient toward the experience itself is diminished. This can be helpful, for insights are accepted without reservations and seem much more valid than under non-drug conditions.

The part of the self that doubts, the observing ego, is in abeyance; the striking happenings and their interpretation by the therapist take on a "realer than real" significance. An overwhelming conviction in the value of the experience is felt. It is difficult to assess the contribution of suggestion to the psychotherapeutic effect of LSD, but it must be considerable. The therapeutic value of suggestion ought not be minimized. Although it is a "superficial" manipulation, it is a potent one. Suggestion and persuasion are part of every form of psychotherapy; under LSD their impact becomes a major feature of the procedure.

The previously mentioned enchancement of insightful recall and the emotional reliving of ancient traumas is a helpful take-off point for personality alteration. They by no means insure that beneficial changes will take place, but they facilitate the work to be done. Too many LSD therapists stop after the enormous insights and impressive abreactions have occurred. Actually, this point is really the start, not the end, of the re-educational process. After a patient has clearly seen himself for what he is, neither the sight nor the insight guarantees that he will be different in the future. One criticism of much LSD therapy is that the spectacular catharsis is considered sufficient to do the job. Most frequently, it produces a temporary period of glowing well-being, only to be followed by a gradual return to the old ways. Only a small number can, unassisted, use the dramatic events as a take-off point for progressive personality growth.

The difficult and more laborious process of re-learning must still be undertaken and we have no evidence yet that this can be shortened with a drug like LSD. The desire to change may increase after one has clearly seen the burden under which one struggles, but hard, slow work still remains.

On the other hand, alterations of one's system of values can be rather rapid. One or very few LSD therapeutic experiences may modify the pressures of an overburdened conscience. By altering even for a few hours the habitual way of looking at ourselves, we might discover that the gnawing guilt was not due to a realistic transgression, but to the distor-

tions of a relentless, punishing superego. After the patient has taken a penetrating look at an alienated, misdirected life, he may still manage to acquire some degree of self-acceptance with a reduction in remorse. Many patients have an unrealistically low estimate of themselves; an increase in their self-esteem is most desirable. These superego manipulations are all that can be accomplished for some individuals. The decompression of the guilt-ridden may not only lighten their load, but can also improve their interpersonal relationships by making the subjects easier to live with.

Jackson sees psychotherapeutic value in the LSD experience as a new beginning—an existential encounter of decisive proportions to be followed by a realignment of the perceptual set. He believes that the LSD encounter can lead to character restructuring. Patients are apt to describe death and rebirth experiences during the period of drug activity. It is the rigid, punishing superego that dies and then is reborn free of the old guilt. It is a new start with the slate wiped clean. No doubt the process represents the use of strong denial, but this defense might be preferable to the previous manner of handling feelings of shame and self-condemnation.

A course of LSD for uncovering purposes is ideally given by a skilled, devoted psychiatrist to a suitable patient whom he knows very well from prior non-LSD interviews. The therapist should be familiar from personal experience with the nature of the changes that the drug induces. He must be flexible enough to use whatever psychotherapeutic techniques are suitable to the situation, which is much more intense than conventional therapy. The months following the LSD treatments are most important, to provide an opportunity for the client's retraining process.

Unfortunately these requirements are not always met; certain LSD practitioners are far from qualified. They have been attracted to the procedure because it is novel and spectacular, or because it puts the therapist in an omniscient position. The best of psychotherapists can obtain excellent results using almost any psychiatric system. They are therefore not inclined to revise their therapeutic technique. The unsuccessful ones are more likely to try every new approach, in the hope that the method will remedy their shortcomings. But more important, the LSD technique is so dramatic and powerful that it fills whatever occult needs some therapists may have to be a mighty, all-powerful figure. Such therapists can hardly be expected to guide their patients toward psychological maturity when they themselves have major unresolved problems. The "miraculous" result they obtain with LSD is the "honeymoon" effect that follows massive abreaction, the shattering death-rebirth ordeal with superego decompression. All too often the treatment terminates at what is really the starting point.

An evaluation of the role of LSD as an aid to depth psychotherapy cannot be scrupulously made now. The capable practitioners who use LSD seem to be able to help their patients through a reconstructive analysis quite successfully and at an accelerated rate. The activities of the "fringe" therapists make a sober estimate of its place as an aid to treatment difficult. The more spectacular claims of instantaneous character trans-

formation must be looked upon as conversions from one defensive repertoire to another—for example, from obsessiveness to denial and sublimation. These are the "cures" we read about in the Sunday supplements or hear about at cocktail parties. It must be restated that such shifts in the way life stress is handled can reduce tension and relieve such symptoms as impotence or psychogenic pain. It is like the lady who converts to Christian Science and trades her neurotic dyspepsia for a symptom-free sublimation of her troubles. This is fine until her appendix ruptures. Similarly, the patient who has had a transforming view of himself and the world through LSD may no longer see himself as worthless and the world as menacing. He can drop his guarded suspicious manner and become more open and outgoing. The hostility of others can be handled with denial. This is fine, provided the effect persists and is never fractured by events which cannot be ignored.

The adoption of a kindlier, more trusting approach to life by the LSD patient may in itself alter the attitudes of those with whom he interacts. They feel less threatened and insecure than when they are met with distrust. Thus the good feelings reverberate back and forth, converting the old, bitter world into a more amiable one. The patient's new adjustment is rewarded and reinforced. In this manner even a simple restructuring of the ego defenses can come to have a substantial and cumulative effect on the person and his problems. He has remade the old hostile environment into a benign one. The contribution of LSD in this instance is to substitute a less painful method of coping with existence, which is subsequently strengthened by a rewarding feedback from the environment. Jackson points out that when the immediate family is unwilling or unable to accept and foster the patient's new attitude toward them, it will be nullified and the patient will be worse off than before.

Some patients are completely unsuitable for a trial with the LSD type of therapy. The eternal adolescent who has never grown up or functioned effectively is a poor candidate. The extremely depressed, the hysterical and the paranoid personalities are poor risks because of the danger of accentuating their depressive, hysterical or paranoid tendencies. Although occasional claims have been made that psychotic patients have been helped, the consensus is that LSD is not for them. The borderline psychotic is a precarious patient because of the danger that he may decompensate and fall into a full-blown psychosis.

Ideally the LSD candidate will have the intelligence to understand the nature of the treatment and will have a strong desire to change. He should be willing to face and deal with considerable emotional pain during this more intensive treatment. The idea that the LSD phase is a beginning, not an end, of treatment must be acceptable to him.

People suffering from an excessively strict conscience, those who have lost confidence and self-esteem, and those who are unable to overcome the grief of a personal loss are the best candidates. Generally depressions due to situational factors are favorably influenced. Those "lost people who are unable to find meaning in existence are particularly good candidates. Patients with anxiety or problems of passivity or aggressivity are amenable to treatment. Sandison claims that the psychopathic char-

acter disorders can be helped by LSD treatment. Sexual psychopaths and drug addicts have been given courses of LSD with some benefit. The problem of the chronic alcoholic will be considered separately.

The techniques of using LSD for uncovering therapy vary widely. After the general problem areas have become known to the therapist, the first LSD interview may be started with a small dose (perhaps 25 mcg) to give the patient a feeling of what the drug does. The dose is raised by small increments in subsequent sessions. Only rarely are more than 150 mcg needed for this type of therapy.

The effects of LSD last four hours even with the smallest doses and more than eight hours with the larger amounts. The protection of the patient requires hospital facilities and constant supervision by the therapist or another suitable person. These precautions, far from alarming the patient, reassure him that he will be cared for and protected.

The therapist has a more strenuous role to play than under ordinary treatment procedures. It is not only that the sessions last all day, but his active participation is required from time to time. For certain patients "letting go" is the most difficult part of the procedure. It means a surrendering of the façade, a giving up of the rationalizations, and a willingness to face up to what must be faced. The evasive maneuvers of the LSD patient are numerous and deceptive. He may try to intellectualize the experience to avoid the confrontation with himself. Conscious or unconscious efforts to suppress the drug effects are sometimes attempted. He may divert the therapist with somatic complaints or with fascinating descriptions of the visual wonders, a sort of flight into beauty. Delaying tactics of all sorts have been attempted. Instead of penetrating into crucial problem areas, the patient may try to skirt around them. An important part of the therapist's job is to identify the evasions and to concentrate on the ordeal of unswerving self-examination. He must insist that the material, overwhelming as it is, be completely dealt with. At the same time he must provide support and reassurance during the ordeal. It is a sort of "dig and fill" operation—an uncovering phase followed by a resolving and supporting phase. The patient cannot be allowed to flee from the frightening symbolism that comes up. If he does, there is danger of a period of psychotic disorganization. It is impressive how the terror disappears once the patient goes into the horrifying symbol and comes to grips with it.

A frequent question is, "How real are the LSD memories, how relevant is the symbolism that comes forth?" The memories may be completely accurate or they can be screen memories, protective memories which distort the actual event, and therefore less valid. Some memories may not represent events that actually happened but may symbolize underlying wishes or drives. The symbolism can be cast in abstractions, in the image of the person whose relationship is being considered or in strange, remote settings. Not infrequently feelings about the important people in the patient's life are projected onto the therapist, and his features and expression are then described as resembling them.

The common belief among psychotherapists that repressed memories for traumatic events must be released only over a prolonged period of

time, and then with great care and trepidation, should be reconsidered. Under LSD the most devastating of buried memories have been recovered and within a single session thoroughly relived and resolved. It requires courage by the patient and fortitude by the therapist, but it can be accomplished within hours. Perhaps it is the peculiar state of detachment or depersonalization which permits the LSD patient to exhume excruciating memories and, while reliving them, also be a calm observer to the events. Or, it may be the length of the session which permits the more intensive working through of the material.

Repetition is a valuable device for reducing the emotional load on recalled conflicts. Once the meaning comes to be understood, it is dealt with again and again, until it ceases to evoke an emotional response. Tape recordings of valuable sessions are used to re-expose the patient on future occasions.

A number of psychotherapists have used LSD in a group setting. Under these circumstances an intensified interaction and rapport between the participants is achieved, and the sessions tend to be more "gutty." Groups of hospitalized sexual deviates and of alcoholics have been studied. The use of LSD makes the proceedings more directly confronting and emotionally loaded. "Phoniness" on the part of the participants is quickly identified and rejected by the members of the group.

An unbiased careful study of the therapeutic effects of LSD on patients observed for a number of years after cessation of treatment would be highly desirable, but the difficulties of executing such a project are prodigious. It has already been mentioned that the therapist must believe in his brand of therapy if favorable results are to be expected. Naturally those who have faith in their type of therapy will be biased in their judgments of patient improvement. The patient himself is not necessarily a good judge of the therapeutic effect. The mere fact that he feels better does not necessarily mean that desirable changes have occurred. The goals of emotional growth are many, and their measurement is most difficult. For a proper study it would seem necessary to have a second set of impartial psychiatrists evaluate the patient for evidence of improvement, using predefined criteria.

The difficulties of doing a clear-cut study would be far from solved even with these precautions. A control group of patients matched as well as possible with the LSD patients must be given the identical treatment except that LSD is not used. A placebo or drug with some minor activity identical in appearance would have to be substituted. It is quite impossible to keep the therapist in the dark about who is getting the LSD because of its pronounced action. Will he invest as much energy and dedication to his non-LSD patients? The patients themselves will quickly know whether they have received LSD or not. Their expectations of its benefits will alter their therapeutic set. These difficulties and others are the reasons why a decisive test of the efficacy of LSD has not yet been performed. The problems are great but surmountable. Hopefully, this investigation will be done one day.

To state that other psychotherapies in current usage have not been exposed to a similar vigorous experimental survey is beside the point.

Psychiatry has entered a stage of development in which every new treatment procedure will require stringent proof of its effectiveness, and the older ones will also come to be scrutinized more critically. Thorough and convincing investigations of the tranquillizing and antidepressant drugs and of electro-shock treatment have already been done to determine their relative values.

The second question is whether personality change can come about with LSD rapidly, safely and with some possibility of enduring. In this context change does not refer to the detailed examination of past relationships and attitudes so that they can be understood and worked through but consists of a sudden new look at oneself and the universe and a decision to abruptly alter the approach to the old problems.

Consider a man who had been living alone all his life in a private emotional fortress, busily engaged in deepening the moats and strengthening the parapets. Despite the prodigious defenses he still feels unprotected and insecure. Furthermore, the walls are now so high that he has separated himself from people. He can only shout to them from the battlements and cannot quite make out what they are shouting back, but the sounds are unfriendly. One day a tremendous storm destroys his stronghold. He is defenseless. To his great surprise he is not demolished or even attacked. People seem friendly. What had he feared? His own hostility? Why was he never loved? Was it those impregnable walls? Maybe it would be better to trust and rejoin the human race than retreat behind the barriers again.

A rapid personality conversion of this sort can happen spontaneously and without warning in the form of a religious experience, as described by William James in "Varieties of Religious Experience." Another type can be induced in a revivalist's tent by the fervid preaching of an evangelist. With proper preparation and guidance, drugs like LSD will also evoke this state. When it is chemically produced, it is called a psychedelic experience. The necessary elements are a stirring emotional encounter sufficient to change one's established values and the resolution to act upon the revelation. All degrees of confidence are placed in the event, from mild surmise to absolute certainty in the truth of the message. When credence is high, the need to change is great, and when the "significant other" rewards and supports the change, the possibility of an enduring conversion is favorable. Evangelical "cures" are too often impermanent because the incomplete conviction gained cannot withstand the harsh scrape of everyday living. Even spontaneous religious experiences which seem to have been divinely inspired may not resist the corrosion of disbelief and sabotage by the person closest to the convert. The transformation wrought by the psychedelic experience is subject to the same fate. In a favorable, rewarding environment it will flourish; inexorable punishment can destroy it.

The psychedelic technique fulfills the hopes of many troubled individuals for a magical intervention, a quick solution to their problems. For those who are unable or unwilling to undergo the major overhaul, a Psychedelic resolution of this sort might be a feasible procedure.

There are hazards. If a person has seen the glory and goodness of life

via psychedelics and then backslides, the guilt of failure is added to the hopelessness of his situation. The depression may be deeper than before the treatment. Others who have been touched by the Light may develop so unrealistic a view of themselves and the world that they become most difficult to live with. These hazards demonstrate the need for counseling even when the psychedelic technique is employed.

The psychedelic type of psychotherapy has been administered to more chronic alcoholics than to any other diagnostic category. There are good reasons for this large proportion. The current estimate of problem alcoholics has been put at five million in the United States alone, and the supply is not diminishing. As a group alcoholics are disinclined to stay with a program of long-term psychotherapy. The recovery rate without treatment is very low (4 percent), and established treatments are far from cures. For those who can stay in Alcoholics Anonymous, the sobriety rate is understood to exceed 50 percent, but unfortunately this agency can reach only a minority of the total alcoholic population. The end stages of uncontrollable drinking are so deplorable that any measure that offers a possibility of success ought to be tried. Since the degree of drinking is something that can be estimated more easily than can personality change, one formidable problem—the evaluation of results—is eliminated. Although sobriety itself is not the highest of goals, nothing can be accomplished with the alcoholic patient unless he maintains sobriety.

While it may be rash to generalize about the causes of alcoholism or the personality of the alcoholic, perhaps something ought to be said about these matters. Alcohol has been defined as the liquid in which the superego is soluble. It may be even more of a universal solvent for our civilization than that. Some portions of ego function also dissolve in this socially acceptable form of surcease. Not only do the sense of responsibility, pride and self-respect melt away, but anxiety, depression, timidity and restraint also liquefy. Savage points out a further reason for the current epidemic of dipsomania. The drunk of an earlier era might have been drowning his sorrows; the modern drunk is filling the emptiness of his existence. It is the loss of purpose and meaning, the increasing alienation from life, that pushes many of our contemporaries into alcoholic excess. Many years ago William James suggested that one possible cause of alcoholism was the hope of finding something "out there," a search for a bit of a mystical experience. If this is so, the alcoholic is doomed to almost certain failure. He may get a flash of it in the instant before stupor prevails, but usually even that is denied him.

Alcohol is a valuable social item, and its moderate and even sporadically immoderate use is by no means decried here. It can procure feelings of friendliness, good cheer and relaxation. Some people want this aid to gaiety, gregariousness and well-being, and no reason exists why it should not be available to social drinkers.

As is the case with all psychochemicals, it is the difficulties of self-dosage which bring most alcoholics to heel. Those with the greatest unfulfilled needs and those who are seeking oblivion are the most vulnerable to the loss of dosage control. It may take many years of heavy drinking,

but eventually the addiction is established. Efficiency is impaired, jobs are lost, assets are wasted, families are split and health is broken. At this point guilt over the ruin that he has brought about and the sense of helplessness and hopelessness compound the alcoholic's reasons to drink. To attempt to rescue and rehabilitate an end-stage alcoholic can be a disappointing and formidable task. It is only rarely accomplished by the individual himself.

The notion that the drunk must hit bottom before he can be saved is well known and has implications for LSD therapy. "Hitting bottom" has a number of facets. It is usually brought on by a jolting disaster. The wife finally packs up and leaves, or the victim wakes up on Skid Row in DTs. It is usually the first occasion in which he unreservedly admits that he is a drunk. The admission is important, for it may start him looking for help in earnest. It is the point at which he realizes that he cannot go on; Tiebout calls it self-surrender. He gives up the inadequate positions of denial and rationalization and is finally willing to seek help from some external source. This may be found in religion (James suggested that religio-mania was a cure for dipsomania), A.A. or psychotherapy. Smith believed that some of his LSD-treated alcoholics experienced an artificial "hitting bottom" which was followed by marked improvement in the drinking pattern of half of his patients.

Some anthropologic evidence is available that hallucinogens used in a religious setting can combat alcoholism. The American Indians were a defeated people during the nineteenth century, deprived of their way of life, refugees in their own land. Too many of their number took to fire-water. Most of those who later joined the peyote religion gave up whiskey. Obviously, the reformation was not due to peyote alone. It was the therapeutic combination of a faith, group solidarity and the ceremonial use of the drug.

LSD is generally utilized in a specific way when it is given to severe alcoholics for psychedelic therapy. The dose is much higher (200 to 600 mcg) than when it is employed for uncovering therapy, and only one or very few treatments are given. The aim is to achieve a profound transcendental experience. The massive amount of the drug defeats any possibility that the ego defenses will hold off psychic dissociation. A psychotic disorganization can be avoided by establishing a field of trust in the procedure and the participants. At the peak of the reaction the boundaries of the ego are lost, and a strong sense of unity with the world outside is felt. What is seen and felt are complementary to the egoless state. A new awareness of one's relatedness to others and to the universe is strengthened because the reality of these feelings is totally accepted. One's concept of self is drastically altered. The hopeless, sinful derelict is now an identity with meaning and worth. Experience becomes discontinuous. A break is made between the miserable past and the hopeful future. The old mess is over. It is a resurrection, rebirth, a new beginning. The rules of life have suddenly been changed.

What has happened? Obviously the "bad" superego has been demolished and replaced by a "good," nonpunitive one, thus reducing the load. The strong conviction of belonging and of having a personal worth

gives new meaning to the outer world and changes the perception of it. The drunk no longer has sorrows to drown, nor is his existence empty. The enormity of the experience, the total confirmation, in that it was all intensely seen, the clarity and "reality" of what was felt, all combine to break up the existing pattern of behavior.

Technically, this phenomenon can be analyzed in terms of an enormous use of denial mechanisms, superego introjects and regression. This is helpful, but another consideration is even more pertinent: can the experience actually produce abstinence in the severe alcoholic? The answer as might be expected is not capable of being reduced to a straightforward yes or no.

The half-dozen or so reports of the use of psychedelic therapy for the alcoholic indicate that over half the patients are considered much improved. The period of follow-up observation varies from a couple of months to a few years. The fact that the evaluators are enthusiastic believers in their method and that the studies are not controlled must be taken into account in appraising them. What seems established is that a certain number of confirmed alcoholics will actually stop drinking for years following this treatment and are able to rehabilitate themselves. Another group relapses immediately or after a period of time. It is an important matter to find out the precise results of his relatively short treatment over many years and what factors make for success and failure.

It is easy to be critical and say that only a faith cure is involved. It is true that nothing is changed—except that the patient has achieved a new faith, reinforced by the overwhelming experience of his sense and his senses. Faith can move mountains, faith can also stop a man's drinking for a lifetime—or a day.

DISCUSSION

Dr. Savage: I think that one of the difficulties common to all therapy is particularly true of the treatment of schizophrenics and the use of LSD. In therapy, you're working in such a superheated environment that it is very easy to pick up many of the patient's stresses and anxieties and worries. I don't think it should be limited to just LSD therapists. There was a paper on the occupational hazards of psychoanalysis. A similar point was made. Essentially, therapy can be said to be a dangerous game; those who don't know it should stay out of it.

Dr. Cohen: I would agree. I would like to underline the fact that the psychotherapeutic position is a hazard in itself, but my only point is that LSD may add to the hazard.

Dr. Kramer: I don't feel that the fact that any particular medical therapy can perform a miracle, so to speak, and do something unusual for a patient, is a consideration in any other form of therapy. This objection

might also be raised: the surgeon who does an unusual heart or brain operation might feel a kind of omnipotent power, in a way, because he's saved a life which would surely be extinguished if it weren't for his operation. So I think if you raise that kind of question here, then you have to raise that kind of question with regard to all medical endeavor.

Dr. Cohen: Well, I agree that this is a problem for the doctor. Those of us who have occult, paranoid notions about ourselves are suspect, whether they be surgeons or other specialists. But again my point is with LSD you're using this phenomenal effect. We must be, I think, careful. I only offer this to you for your own observations; I don't offer it as proven. I have no data except the observations that I have.

Dr. Kramer: Let me just bring in a point of view with regard to the fact that you give a drug to the patient, and it also indirectly affects the therapist. In the animal kingdom this is not an unknown phenomenon; it's quite a common one. Injection of testosterone into male pigeons produces ovulation in the female. This is because the male then goes through very strong male behavior, and since the male is in relationship to the female and the female sees this, she starts ovulating. I've done similar things with my fish. If I put a female next to a male, I simply move my male to a tank with a glass partition, and a female who has been separated from males, say for a month, catches sight of that male. She not only starts ovulating, but deposits eggs without benefit of fertilization. This kind of effect, of treating one individual and getting an effect on another, is very common. As a matter of fact, it's common in the treatment of alcoholism in couples; the cure of one often disturbs the mate. So this is part and parcel of the dynamics of either a social relationship, a mating relationship or male-female bonds; and this is just one of the things that the therapist has to be aware of! Since it is a common phenomenon, he must take it into consideration in his treatment.

Dr. Cohen: In that regard I've had LSD therapists tell me that they, during the LSD session itself, had LSD effects. Here, too, this may be part of what you're describing. Again, it's a matter of emphasis rather than anything else.

Dr. Osmond: I think the people who are sensitive and good at this type of thing do run, as in any other kind of psychotherapy, an especial kind of danger. I think we are under an obligation, since not all of these people can be, by the very nature of this, professionally trained; we're under an obligation to understand this and provide them with the support and help which they need. We don't always carry out this obligation because I think, in part, we are unwilling almost to believe that their sensitivity could increase in this particular way. As Dr. Kramer points out, although it is quite well known among the biologists, we tend to believe that people are really well insulated although we talk about interpersonal relationships. They may impinge with immense force, but we prefer not to think of them that way. I think this does happen; I think it has to be studied; and I

think we have to develop the techniques for not allowing our therapists to be destroyed in the battle.

Dr. Grof: Dr. Cohen used a very appropriate parable in his most interesting paper in comparing a strongly defended neurotic with a man who builds and continually strengthens a tower with many moats and parapets, without being in real danger. I would like to project slides of pictures made by one of my patients who was undergoing the psycholytic series with LSD. The drawings illustrate Dr. Cohen's comparison in a most striking way.

The patient had an extremely severe case of cancerphobia, treated unsuccessfully for eight years preceding LSD therapy. During the sessions she was able to re-experience several traumatic events in her history, genetically connected with her complaints. The most important one was a sexual seduction by her foster father in the eighth year of her life. The final reconstruction, which she gave after she had re-experienced different parts of the event in many separate sessions, was as follows: the foster father was alone with her, and became sadistically excited after having killed a goose. He then turned to her, touched her on different parts of her body and finally put his penis into her mouth, promising that she would see it grow.

The patient had, in different sessions, a vision of a tower, indicating how far she had proceeded in therapy. The following interpretations of the pictures were made spontaneously by the patient:

1. A picture of the bathroom where the event was supposed to have happened. The patient drew a bird's-eye view and situated parts of the event in different parts of the room (noted in pencil).

2. A picture of the vision which the patient had when she approached in an LSD session the event in the bathroom for the first time. The mighty walls of the tower represent her defenses (built out of anxiety as denoted in the picture), which prevent her from getting to the traumatic event. The bathroom scene is situated on the inside at the bottom of the tower. The arrows represent the attacks of LSD aimed at destruction of the tower.

3. The tower was already damaged, but it was repaired with iron plates. The place where an arrow had already penetrated the tower is covered with crossed strips of plaster. This has, however, an ambiguous character, since it represents at the same time a part of the original bathroom scene with a red cross on the first-aid box.

4. Picture of a vision which followed immediately after the patient fell deeply into reliving the traumatic event. Blood flowing between the stones refers to the killed goose and perhaps also to a digital defloration by the foster father.

5. A vision immediately following that picture in four. On the left side there is a family house with the bathroom in the attic. The huge chimney of a factory bends over the street and touches the

small chimney of the house. In the same vision there is a target with the bull's-eye hit. ("That's it, here we are.")

6. In one of the following sessions the tower can be seen as a ruin or a monument. Grass and trees growing on the ruins represent the perspective of new life.

7. A full reliving of the traumatic scene, accompanied by a transitory ego disintegration which coincides with a vision of a mighty explosion, in which the tower and the patient are torn to pieces with blood flowing all over.

8. After the explosion the therapist enters the scene, picks up the pieces of the patient's body and puts them together. While he holds her in his arms a beautiful rainbow appears as an optimistic symbol.

9. In one of the following sessions only a few stones are left from the original tower, arranged in the form of a fireplace. A new, much smaller tower appears (reconstitution of defenses on a much lower level).

10. (a) An experience immediately following that shown in nine. The patient sits by the fireplace like a savage, cooking and eating the therapist. She terminates the feast by licking his femur, (b) She painted spontaneously, for comparison, how her attitude to the therapist appeared to her one year ago.

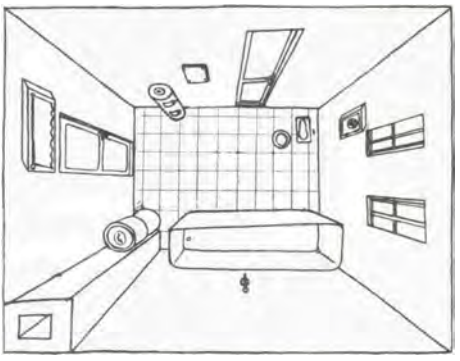
11. The smaller tower now has a spiral staircase. The patient describes how she can now mount the tower and see exactly what happened in the bathroom. At the same time her view is much broader and her horizon widened.

12. At a time when, in the clinical picture of LSD sessions and even in the free intervals, anxiety was partially transformed into libidinal tension, a vision appeared during one session: a hole in the earth could be seen at the place where originally the different forms of the tower had been perceived.

13. Later this hole was seen as deepened and broadened and contained different objects, a soldier's helmet, symbolizing the patient's marriage and some past traumatic experiences, and others.

14. In one of the later sessions the hole turned into a spiral formation ("screw") penetrating ever deeper into the earth. The patient herself discovered the sexual meaning of this vision.

15. The last vision of the "tower series" was that of a hot desert with a mirage of the tower. The patient now felt that the tower was only a useless fiction. The lower part bears a resemblance to the Eiffel Tower, being a symbol for "French" love which, at this time, formed the content of many daydreams and fantasies of the patient.



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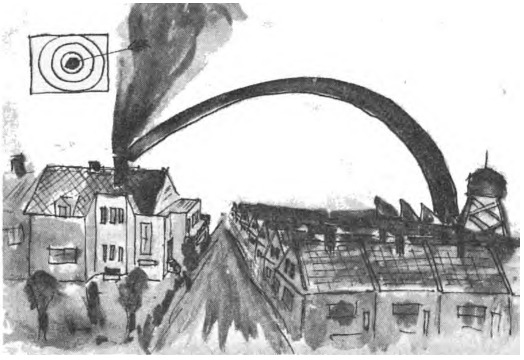
3. The tower was already damaged, but it was repaired with iron plates. The place where an arrow had already penetrated the tower is covered with crossed strips of plaster. This has, however, an ambiguous character, since it represents at the same time a part of the original bathroom scene with a red cross on the first-aid box.

4. Picture of a vision which followed immediately after the patient fell deeply into reliving the traumatic event. Blood flowing between the stones refers to the killed goose and perhaps also to a digital defloration by the foster father.



5. A vision immediately following that picture in four. On the left side there is a family house with the bathroom in the attic. The huge chimney of a factory bends over the street and touches the small chimney of the house. In the same vision there is a target with the bull's-eye hit. ("That's it, here we are.")

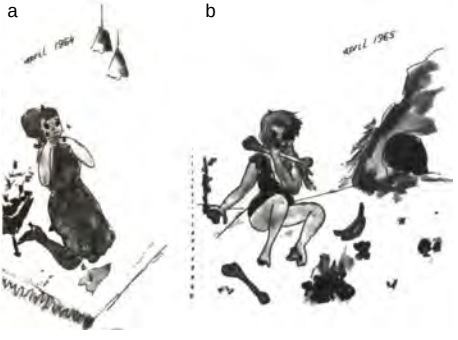
6. In one of the following sessions the tower can be seen as a ruin or a monument. Grass and trees growing on the ruins represent the perspective of new life.

8. After the explosion the therapist enters the scene, picks up the pieces of the patient's body and puts them together. While he holds her in his arms a beautiful rainbow appears as an optimistic symbol.

7. A full reliving of the traumatic scene, accompanied by a transitory ego disintegration which coincides with a vision of a mighty explosion, in which the tower and the patient are torn to pieces with blood flowing all over.

9. In one of the following sessions only a few stones are left from the original tower, arranged in the form of a fireplace. A new, much smaller tower appears (reconstitution of defenses on a much lower level).

10. (a) An experience immediately following that shown in nine. The patient sits by the fireplace like a savage, cooking and eating the therapist. She terminates the feast by licking his femur, (b) She painted spontaneously, for comparison, how her attitude to the therapist appeared to her one year ago.



11. The smaller tower now has a spiral staircase. The patient describes how she can now mount the tower and see exactly what happened in the bathroom. At the same time her view is much broader and her horizon widened.

12. At a time when, in the clinical picture of LSD sessions and even in the free intervals, anxiety was partially transformed into libidinal tension, a vision appeared during one session: a hole in the earth could be seen at the place where originally the different forms of the tower had been perceived.

13. Later this hole was seen as deepened and broadened and contained different objects, a soldier's helmet, symbolizing the patient's marriage and some past traumatic experiences, and others.

14. In one of the later sessions the hole turned into a spiral formation ("screw") penetrating ever deeper into the earth. The patient herself discovered the sexual meaning of this vision.

15. The last vision of the "tower series" was that of a hot desert with a mirage of the tower. The patient now felt that the tower was only a useless fiction. The lower part bears a resemblance to the Eiffel Tower, being a symbol for "French" love which, at this time, formed the content of many daydreams and fantasies of the patient.

V

PROBATION CASEWORK

The Use of LSD in Probation Casework

Mary S. Wicks*

THE PROBATION OFFICER AND THE PSYCHIATRIC SERVICE IN GREAT BRITAIN

Definition of Probation

The United Nations study "Probation and Related Measures" (published in 1951) noted the wide variety of meanings attached to that term, and suggested a definition which embraced the essentials of probation as practiced in many countries. This summarised probation as being a "method of dealing with especially selected offenders" consisting of "the conditional suspension of punishment while the offender is given individual guidance or treatment." For Great Britain a narrower definition is possible: the Departmental Committee on the Probation Service defined probation as the submission of an offender while at liberty to a specified period of supervision (not exceeding three years) by a social caseworker who is an officer of the court, during which period the offender remains liable, if not of good conduct, to be otherwise dealt with by the court.

Social Inquiries by Probation Officers

The evolution of penal policy leading to the development of the probation system has been accompanied by a growing recognition that the circumstances of the offender are relevant not only to the degree of his culpability but to the way in which he might be expected to respond to the treatment decided upon by the court. This is reflected in legislation requiring comprehensive social inquiries to be made about offenders under the age of seventeen. Information about the circumstances, the offender's character and physical and mental condition is also considered by the court before it resorts to imposing imprisonment on a person under the age of twenty-one years, or on a first offender. It is also most desirable that a social inquiry report should be considered by the court before a Probation order is made. The value to a court of full information about an offender is not, however, limited to these special classes. Except in trivial cases, juvenile courts must be provided with comprehensive reports on all

* Probation Officer, Kidderminster, Worcester, England.

persons under the age of seventeen, and Magistrates' courts often ask probation officers to make social inquiries about adult offenders before they are dealt with. Most higher courts (Quarter Sessions, Assizes and the Court of Criminal Appeal), where the accused person consents to inquiries being made, require social inquiry reports on all persons committed for trial, aged thirty-one years or over, who have not been convicted, since reaching the age of seventeen, of an offense punishable with imprisonment, and persons who have recently been in touch with the probation service. Where a social inquiry report has not been prepared before trial, the court may adjourn the case after conviction for a report to be prepared before sentence. In 1962, of 176,067 male and 27,708 female offenders found guilty of indictable offences in Magistrates' and Higher Courts, in Great Britain, 19.7% male and 25.4% female offenders were placed on probation.

Treatment for Mental Condition

A court may include in a probation order a requirement that the offender submit to medical treatment to improve his mental condition if the court is satisfied on medical evidence (which must come from a practitioner approved under the Mental Health Act 1959 as having special experience in the diagnosis and treatment of mental disorder) that treatment is required, provided that it does not warrant his detention in a hospital. Compulsory detention (Part V), which cannot be included unless the court is satisfied that arrangements for the proposed treatment have been made, is for a period of not more than twelve months from the date of the order, and may apply to either residential or non-residential treatment, usually arranged under the National Health Service. If the treatment is residential, the probation officer is required to carry out supervision only to such extent as may be necessary for the purpose of discharge or amendment of the order. It remains for the probation officer to endeavor to improve conditions in the probationer's home if necessary and to conduct such liaison work as may be required between the doctor and the court. The probation officer is responsible in the normal way for the supervision of those offenders who are receiving non-residential treatment.

Psychotherapy and Social Casework

Probation officers also undertake matrimonial conciliation, and aftercare of persons released from detention centers, approved schools, borstal institutions and prisons. Since many of these clients are psychologically disturbed and/or recidivist offenders, it is often necessary to invoke psychiatric help in the rehabilitation process. Within the Powick Hospital (Worcester) catchment area, many High Court Judges, Stipendiary and Lay Justices value the skilled and willing service provided by the medical, social work and nursing staff in terms of diagnostic assessments and treatment of social deviants. The work of probation officers is greatly facilitated

by the harmonious cooperation between the Judicial and Mental Health Services. As agents of the court, we are responsible for arranging psychiatric examinations, providing social histories, contacting patients' families and offering after-care support. To avoid unnecessary confusion and uneconomic use of trained caseworkers, it has long been the practice for probation officers to work in close cooperation with psychiatrists. This arrangement is advantageous because the continuity of supervision by one caseworker is not interrupted by temporary transfer to the hospital social work department. Psychiatrists offer a supportive consultant service to probation officers involved in casework relationships with out-patients receiving treatment and encourage us also to maintain close contact with clients resident in hospital.

Dr. J. D. Sutherland, Tavistock Institute, London, in a paper delivered to a conference of psychiatric social workers in 1959 stated:

> The wide range of severity in the psychological disorders makes it appropriate to employ several levels of psychotherapeutic skill. Various professional groups other than the specialist psychotherapists are already concerned with these illnesses—general practitioners, psychiatric social workers—but they could be much more effective if they were given training in psychotherapeutic skill. The skill is "psychotherapeutic" because the activity requires an understanding of psychodynamics, especially the role of unrecognised motives, and a particular attitude in the therapist which will permit the patient to reveal himself within the therapeutic relationship.
>
> It is therefore, to my mind, not a question of whether or not these groups should learn psychotherapeutic skills, but what level of skill can they acquire, what type of case is suitable and what conditions are required for its acquisition and continued use?
>
> My colleagues and I at the Tavistock Clinic during the last few years have had experience in training psychiatrists, general practitioners, public health officers, social caseworkers and probation officers in skills for the psychological problems they encounter. As is only too well known, many psychological cases cannot be assessed in advance in regard to what they need. We are therefore often unable to say that this or that case can be helped by a certain level of skill; sometimes we can, but we have to recognize our limitations here. These and other difficulties can be met largely, however, by a "permanent" relationship between the caseworker and the medical specialist so that they can discuss certain difficulties with a particular case. The specialist can best help her when he knows her and what she can do. Under such conditions some workers achieve a high degree of skill and are able to treat increasingly severe conditions. At the same time, should any problem in the treatment arise, there is the good relationship with the specialist, which insures that any higher level of skill required can be introduced by transfer of the patient to the specialist clinic or hospital. I should, therefore, say that in exploring the boundaries of the role for the caseworker perhaps we have got to start with the nature of the institutions required and their organization. If the specialist psychotherapeutic clinic takes, as an important part of its function, the training and maintaining of allied groups,

then there can be a considerable expansion of therapeutic roles in various groups. My colleagues and I would welcome such growth. (2)

THE USE OF LSD IN PSYCHOTHERAPY

Hospital Treatment

Dr. A. M. Spencer (Powick Hospital), in a recent paper (3) emphasized the value of LSD as an abreactive drug with unique properties:

> No other drug seems to equal it either in the vividness of feelings of reality with which repressed experiences are brought into the consciousness nor in the levels, natal and pre-natal, at which these experiences are relived with the patient's body image diminishing to the size he was at the time of the original traumatic incident.

Dr. Spencer's view is that treatment with LSD is a form of individual and group therapy administered by a group of therapists, with the transference situation greatly enhanced by the LSD, which causes the patient to regress to an infantile state corresponding frequently to the early months of life and sometimes to the pre-natal stage; that the patient needs father and mother surrogates during treatment and that the general therapeutic attitude should be one of acceptance of the patient as a person, in a non-critical, supportive treatment situation; that LSD reactivates in consciousness patterns of neural activity (engrams) which in infancy had become associated with anxiety caused by frustration, rejection, etc. If this reactivation of the neural patterns takes place in an "accepting" environment, the engram readjusts itself to a more "mature" pattern, free from abnormal amounts of anxiety, and the reconstruction of the personality of the patient follows. LSD therapy is therefore regarded primarily as a "retraining" or "reconditioning" therapy and not primarily as a "psychological" form of treatment. Because LSD is regarded primarily as a "retraining" or "reconditioning" process, much importance is attached to dealing with the re-experienced, repressed traumatic memories in the light of the patient's present, "here and now" environment. In particular, the patient's position within the family group is regarded as important and, increasingly, the family, rather than the individual patient, is looked upon as the "treatment unit."

In describing the LSD unit therapeutic team at Powick Hospital, Dr. Spencer regards himself as the group leader of a team seeking to meet the patient's needs in the "here and now" hospital situation and the patient s "here and now" home environment. Each patient has his own psychiatric nurse, who is always available during treatment, and other workers are used to help him and his family adjust to the changing conditions caused by the patient's maturing personality. Thus, while undergoing treatment, the patient can be in a transference relationship with two or more therapists, who work as a team to deal with the countertransference problems which inevitably arise.

Treatment of Offenders and Other Social Deviants

Probation officers assist psychiatrists in helping their patients' families accept and adjust to changed attitudes and behavior, and during recent years, trained caseworkers in this service have been used, under supervision and with frequent psychiatric consultation, to undertake more intensive casework with the patients receiving LSD. In abreactive therapy, out-patients are encouraged to determine the most appropriate times and the frequency of appointments; interviews are usually arranged during the evening following treatment, or the next day, when they are still extra-perceptive and aware of LSD reactions.

In the limited time available, it has not been possible to collate material and undertake follow-up inquiries to record accurate and useful results of long term response to LSD abreactive therapy in the treatment of offenders. At present, due to heavy case loads, the number of clients with whom any probation officer can work intensively at one time is usually limited to two or three persons. In my own experience (eight years) most of the patients referred for LSD treatment have been inadequate men and women with poor ego strength whose behavior and social histories suggested focation at a pre-Oedipal stage. Most had failed to respond to punishment and/or casework help offered at levels of environmental modification or psychological support and in some cases, other kinds of psychiatric treatment. Without exception, each client had been unable to make satisfactory social adjustments or healthy personal relationships. Some were sexual deviants or recidivist petty offenders, regarded as "a burden to society." In at least two cases the annual cost to the community of supporting large families by means of National Assistance and institutional care equalled the probation officer's salary, which it is held justifies the time-consuming nature of casework with LSD treatment.

Local justices, receiving progress reports about probationers and witnessing improved attitudes and behavior, have been encouraged to refer other persistent offenders for similar treatment, but at this stage it would be premature and over-optimistic to assume complete recovery on the part of those clients (estimated at over 50 percent) who are now self-supporting and able to function in the community without recourse to criminal practices. In working with these immature clients, having defective moral standards and poor reality perception, the casework relationship is very demanding and under LSD abreactive treatment they invariably regress to even more infantile and, occasionally, overt aggressive behavior. This acting out, following the release of unconscious material, is often alarming to the social worker without experience in a psychiatric agency; but probation officer caseworkers, with psychoanalytically orientated training, have been able to help clients to work through such turbulent phases of treatment by using skilled consultation and respecting the boundaries of casework and psychotherapy.

Miss Margaret A. G. Brown, (4) in her review of casework methods,

defines major casework processes which include "clarification" and "insight development." This is a valuable guide for probation officers functioning in an authoritarian setting, and her reference to working with clients needing "primary" emotional experiences of love, care, shelter, control and guidance, and those who need corrective "secondary" experiences is followed by a quotation from a 1963 publication by the Association of Social Workers (5).

> The casework relationship is not the same for every client, but should, as far as possible, be adjusted to meet the varying needs of different clients. One important part of the casework relationship is to supply in some measure those experiences necessary for satisfactory emotional development which have been lacking in the life of the individual client. Thus, an inhibited and submissive person may need to be encouraged to speak his mind to the worker, and to express his feelings of criticism and dissatisfaction as a prelude to standing up for himself in other situations. On the other hand, a client whose pattern of behavior is to control and exploit people until they eventually throw him over, may need a relationship with someone who resists all attempts to manipulate him, while remaining friendly and sympathetic. Thus the balance between firmness and permissiveness has to be finely adjusted to the needs of the client, and should not be influenced by the worker's own need, for example, to control situations himself or to keep on the right side of everybody.

Caseworkers are primarily concerned with helping clients solve reality problems but often it is necessary to enable them to change underlying attitudes influencing "here and now" behavior and it has been established that, in a number of cases, LSD expedites this process. Recidivist offenders suffering from character disorder usually need skilled psychotherapy but intensive casework support can also facilitate rehabilitation. One such male offender, aged 30 years, had thirteen convictions for petty larceny and sexual offenses against little girls and young women, some of a violent nature. Before his last release from prison in 1957, he worked intermittently, losing jobs for absenteeism and dishonesty. He persistently failed to maintain his family. LSD treatment, with a period of intensive psychotherapy, enabled him to make more constructive use of casework help. He keeps in touch with the psychiatrist and probation officer on a voluntary basis, recognizing his continued need for support in coping with day to day problems. There have been many setbacks and the prognosis is still doubtful but this man exhibits an increasing sense of responsibility in his general social behavior and, when physically fit, is now an industrious worker able to support his wife and five dependent children. Some offenders with psychopathic tendencies have failed to make any response to LSD therapy, when tried after other forms of penal and psychiatric treatment had proved unsuccessful.

Finally, I would like to describe a case in greater detail, in which the assessment of progress is supported by tape-recorded interviews before and after LSD treatment (6).

Mr. John M.: Social History and Presenting Symptoms

In November 1963, Mr. John M., 28 years old, sought advice from the probation officer about his wife's departure from their home. He recognized his own need for help and welcomed referral to a consultant psychiatrist at Powick Hospital.

John's father, who died in 1961 (coronary thrombosis) was a skilled factory worker of sober habits who made better material provision for his family than most people in his social group. He demanded high standards of behavior and exercised restrictive control in his relationship with John. The mother is competent and affectionate but also had rigid standards. Both parents protected and organized John until his marriage in 1960. His younger brother is brash, robust and popular with his peers.

John recalled a happy early childhood with loving parents until the age of eight. Just after his brother was born he was incapacitated by injuries to his hip sustained in a cycle accident. For about a year he received out-patient hospital treatment and eventually was admitted to a hospital for a period of three-and-a-half years. John found it difficult to say anything about his father which could be construed as criticism, but revealed ambivalent feelings when talking about his parents who had promised he would be as active as other boys after treatment. Both parents visited the hospital regularly and lavished him with presents and well meaning reassurance. During this time, John had two surgical operations but was using crutches on his discharge (aged 13), and subsequently was fitted with a caliper. On returning to school, John was sensitive about his poor educational attainment and his progress was negligible. He felt he was not accepted by other children and drove himself to play football and other energetic games. Although "taken about" by contemporaries, he always felt they were motivated by pity and he was shy and inarticulate. John remained dependent on his parents and was even more dominated by mother when his brother became normally assertive in adolescence. He was always over scrupulous about his personal appearance and worried excessively about the day to day problems of ordinary life. John's disability is not conspicuous but his right hip and leg are inflexible and he wears a "built-up" surgical shoe.

In 1958, John became acquainted with Wendy, 14, the illegitimate daughter of an unstable mother, who subsequently married and had four more children. Material conditions were appalling and her stepfather had many criminal convictions. Wendy pilfered persistently and was twice placed on probation for larceny. Although his parents disapproved, John (then 23) spent most of his leisure time with Wendy and they had intercourse at her home, while her parents were out with a gang, blowing safes and committing other serious offenses. When the stepfather was arrested, Wendy's mother gave evidence against him but was vitriolic to John, thinking he had informed the police. Previously, she had condoned his sexual relationship with Wendy but, to punish him, complained to the

police. John was cautioned but felt excessively guilty because he had not been prosecuted, and was brought by his father to a female probation officer for self-imposed supervision. Wendy was placed in a probation home for twelve months, during which time John visited her regularly and managed to rent and decorate a small house. In addition he saved a substantial sum of money to prepare for marriage. He called to see the probation officer every week, talking quite freely about his practical problems. He responded to "supportive" encouragement to be a little less dependent on his parents and married Wendy on January 16, 1960.

John obtained more remunerative employment as a laborer in heavy industry but flogged himself to "keep out of debt" and became even more timid and withdrawn. He had always avoided social outings which made him feel inferior and was too embarrassed to go into shops. When traveling by train, he was reduced to a state of acute anxiety and was unable to converse with other people, even those he met daily at work. John also had sleepless nights, worrying lest his small son stop breathing; and was too nauseated by dirty nappies to handle the child in infancy.

In early casework interviews, John became aware that he had transferred his dependence from his mother to the probation officer and then to his wife, who could not tolerate such a heavy burden. Wendy rebelled against his rigid standards and she became apathetic and careless in the home after their child was born on June 7, 1962, thus incurring her mother-in-law's disapproval. Lacking self-confidence, John did little to help her but tried to emulate his father in the marriage relationship. His expectation of Wendy's role was conditioned by his mother's behavior and he was possessive and perpetually fearful she would forsake him for a "real man." John was able to express doubts about his masculinity and anxiety about his immature and diffident social behavior.

In October 1963, Wendy volunteered she had fallen in love with another man (Mr. X) and immediately left John to cohabit with the man at a local address. Mr. X had a criminal record and was similar, in personality and behavior, to Wendy's feckless and delinquent step father. John had conflicting feelings about the marital breakdown: he felt Wendy had left him because he was not a real man but found it difficult to understand why she had returned to the kind of life she hated in childhood. He made desperate and humiliating efforts to effect a reconciliation but expressed some hope that he could manage without her, if psychiatric treatment would make him more mature and self-confident. From early adolescence, John suffered prostrating attacks of migraine, causing frequent absences from work and although apprehensive about taking more responsibility he had fantasies of promotion to skilled employment.

Response to LSD Abreactive Therapy

Clinical testing revealed that, although practically illiterate, John is of good average intelligence and capable of training for skilled work. The psychologist thought he would benefit from feeling part of a "special group" but that he might need "considerable putting together again

following LSD, and additional therapeutic support (after treatment sessions) was recommended.

Treatment commenced in December 1963, with John attending the hospital LSD unit one day each week, followed by a casework interview (approximately one hour) with the probation officer the same evening. Other appointments were arranged, as and when required, and tape recorded interviews with reviews of progress at significant stages of treatment are available. (6)

First Review; March 1964: Wendy was then in lodgings and pregnant by Mr. X, who was serving a sentence of imprisonment. John was still anxious for a reconciliation but she was rather alarmed by his unaccustomed and unpredictable behavior and doubtful about his long term response to treatment. Wendy attended the probation office for weekly interviews and John was pursuing a second courtship. During the first ten weeks his changed attitude was quite dramatic and he exhibited typical adolescent behavior. At times, John was brash and aggressively self-assertive, seeking to punish Wendy for her infidelity and to make her prove her love for him; at other times he could be tender and protective. On one occasion, John set about Mr. X with a poker, and at work he began to "stand up to" workmates who had previously taken advantage of his submissive behavior. For the first time since becoming acquainted with Wendy, he organised social outings instead of being escorted and supported by a female companion and there were many overt displays of anger to his mother. John had no attacks of migraine and at his own request arrangements were made for him to receive private coaching in English.

In the early stages of treatment, the caseworker was thrust into the role of John's "organising" father, as John felt unable to make any move without first seeking permission. Within an accepting relationship, he was enabled to talk about his sexual fantasies, long-standing urges to assault young girls, and his desire to drink, gamble and associate with prostitutes. Subsequently, John decided he had no real wish to cast aside standards of "decent" behavior acquired from early childhood, but sometimes became angry with the caseworker, accusing her of depriving him of this habitual means of escape from the realities of his rather drab existence.

April 1964: Having worked through some of the major problems of defective parent-child relationships, and feeling more confident at work and in other social situations, John welcomed a special interview (tape recorded) to discuss his acute anxiety associated with death. Under small doses of LSD he had no visual experiences or awareness of recovery of childhood memories but reactivated his own parent/sibling relationships in the treatment unit "family" situation with mother/father surrogates and a male fellow patient who was more actively demanding of attention. For three consecutive treatment sessions, John experienced a sensation of acute fear and was aware that he resisted the action of the drug. Repressed experience was so near the surface, however, that in casework interviews he recalled traumatic episodes, including an occasion at the age of two or

three years when he was taken to see the body of a young woman reposing in a coffin. John described the scene and his fear with intense feeling and after the next treatment informed the psychiatrist that he was unable to continue because he was unable to trust doctors. He told the caseworker about an incident, after marriage, when he suffered a feeling of numbness on one side of his body and had been so sure he would die that he presented himself at the local hospital casualty department during the night.

In a subsequent casework interview, John expressed doubts about his sanity, describing how he often wondered if he was dead when driving his car, which had come to resemble a coffin. That same week, having previously been most punctilious about respecting the professional nature of the relationship, John presented himself at the probation officer's home at 1 A.M. He was distraught and incoherent and repeated incessantly that the probation officer was the only person who could tell him if he were alive or dead. John was so disorientated that arrangements were made for him to see the consultant psychiatrist as soon as possible and John then requested a special treatment session with the probation officer in attendance.

June 1964: Casework interview with John at the hospital LSD treatment centre with the psychiatrist available if needed. John had no LSD but abreacted for approximately four hours, reliving traumatic childhood experiences which threw more light on his recent disturbed behavior. He repented, in greater detail, his first experience of seeing a corpse, described as a "vampire" with long fangs and claws. John then described a visit to the cinema, in pre-school years, when he was terrified by a horror film featuring vampires, and subsequent hospital visits to his senile, paralysed and speechless grandfather, whom he recalled as a repulsive and frightening person. He felt guilty about hating the old man and about his feeling of relief when these dreaded visits were terminated by death.

At the age of six, John heard a radio play in which the "bad doctor" changed an oxygen cylinder for one containing a poisonous substance to kill an "enemy" who was undergoing a surgical operation. This made such a profound impression that he became afraid of doctors. Soon after, John was admitted to hospital for long term orthopedic treatment. He feared total parental rejection and became very angry with his mother and father for putting him at the mercy of doctors but was unable to express these feelings. John did not reveal his panic when told he was to have an operation but fought against the anaesthetic; and, in treatment, he relived his fantasy on regaining consciousness that he was dead and that his parents had been summoned to the bedside. He could hear the same sound as was emitted by the gas cylinder in the radio play—associated with "killing'—but in the reliving of this experience, realised that this was an appliance being used by another patient.

Following this session, John gained more insight concerning his adult attitudes and behavior and his neurotic symptoms steadily subsided. LSD treatment was terminated but the weekly casework interviews continued and monthly follow-up appointments were arranged by the psychiatrist.

July 1964. (Tape recorded interview.) There was evidence of maturation in John's account of Wendy's first encounter with Mr. X, following the latter's release from prison, and the calm and purposeful manner in which John took practical steps to protect her from further unwelcome approaches. By this time, Wendy had adjusted to the changes in John's behavior and his more masculine role in their personal relationship. He was then asserting himself quite amiably when in conflict with his mother, who became more relaxed and able to moderate her own rigid standards. John was more spontaneously affectionate with his small son and was no longer nauseated by excreta or so fastidious about food and his personal appearance and he continued to be free from migraine. Having persevered with his English lessons, he was confident of his ability to express himself on paper and was benefiting from private coaching in elementary mathematics.

Although doubtful if he could ever accept Wendy's illegitimate child as a member of the family, and at first seeking to punish her by depriving her of the baby, John allowed her to make her own decision when this infant was born (August). After many discussions with her husband and the probation officer, Wendy decided to offer the child for adoption but at times she regretted her decision and John was able to tolerate the acting out of her anger and guilt feeling. He was much more patient and supportive and eventually accepted her reluctance for sexual intercourse and periodic withdrawal from their warmer relationship on a new found basis of mutual trust.

September 1964. Special interview (tape recorded) to discuss John's approach to his departmental manager for more congenial and skilled employment. Disappointment, when his hopes were not realised, caused partial and temporary regression to the diffident and despondent attitudes exhibited before treatment. He accepted, however, the semi-skilled job which was offered, and was more realistic about the need for further education and training to qualify for promotion and about his family responsibilities, which made it difficult for him to take an industrial trade course. Although wishing to make good material provision for his wife and child, John was no longer motivated by his neurotic drive to keep out of debt and was unwilling to forego domestic pleasures in order to earn high wages.

January 1965. Terminatory Interview. (Tape recorded) John is now confident that he can manage his own affairs. For over a year there has been no recurrence of migraine and he has lost no time from work on account of domestic upsets and psychosomatic ailments. He is now thinking seriously about employment prospects and without prompting, has decided to enroll in night school next autumn, thus exposing himself to competitive effort with youths having the advantage of modern education.

Feeling free to quarrel with his wife, mother and brother, without excessive guilt and fear of rejection, he is much more secure in family relationships and as far as his child is concerned, the changed pattern of

marital role reversal is likely to promote healthier emotional growth. John enjoys regular social outings with adult male companions and now offers to "baby sit" to enable his wife to spend one evening a week with her girl friends, without feeling unduly worried about the dangers of further infidelity. He is planning a "second honeymoon" in Jersey this summer, having little or no anxiety about traveling by air and train, and readily shares with Wendy the responsibility for domestic chores, budgeting and shopping expeditions.

John's basic personality has not changed but under treatment his true personality has emerged. He now feels he has overcome his fear of doctors and, although confident that he has made lasting recovery, he would be prepared to undergo a further course of LSD treatment, should the need ever arise.

DISCUSSION

Dr. Fremont-Smith: We thank you for bringing to us a different orientation with respect to the problem we are all facing on LSD. I think it is a most significant contribution, to see what happens when the patient is in the community under supervision. I think we as psychiatrists always, and I have personally, had so much to learn from caseworkers. We don't always use them effectively. So I am particularly happy that we have a casework presentation in this Conference.

Dr. Pahnke: I gather that for some of these offenders in the courts to receive treatment and to be put on probation, you have to make arrangements for this in advance before sentence is passed. Am I correct?

Miss Wicks: Yes.

Dr. Pahnke: Now, can you tell us a little bit about your relationship with the offender? How do you get the offender to agree to participate in this kind of a relationship, and how much of a period of time do you have with the offender before sentence is passed to achieve this, or suggest that it might be advisable to put the offender on probation? Would you go into this just a little?

Miss Wicks: We usually have at least a month. During that period we approach the defendant and his lawyer or representative. Usually there is cooperation on the part of the defendant because this is where one has a stress situation, and if we feel that a psychiatric report and a diagnostic assessment is going to assist the court and we have federal permission to make these arrangements, we can come to the court armed with the psychiatrist's report. I feel that this report is very important because this report is called for by the court and not by the prosecution or the defense, and once having given his consent, the prisoner cannot control this. Now this means that the psychiatrist

will not develop into someone who will do the prisoner harm, for very often he will come into court and state that he cannot help this person because he is uncooperative.

Dr. Pahnke: The courts are, then, accepting this type of treatment, and they seem to have an understanding of what it involves; and if a second offense is committed under the treatment, by and large they go along with the caseworker or the psychiatrist or whoever is working with the offender. Is that correct?

Miss Wicks: I can only speak for the justices in the court for which I am working, or from personal experience. We have a long follow-up out-care—statutory—we know what they are doing. We can't say, "I think they are doing nicely." You have to name chapter and verse in a written report which you must substantiate with evidence if necessary. It is accepted as part of the treatment.

Dr. Hoffer: My experience is very similar to Miss Wicks'. I have had cases where the judge, without calling the psychiatrist, has suspended sentence on condition that the patient come in for LSD treatments. So we do have the same kind of favorable reaction in Saskatoon to these particular treatments. And even though the patient feels pressed by the court, I don't think that is harmful. I think it is often an advantage, and the suspended sentence may be on the second condition that the person, having had the LSD treatment, must hereafter not drink any more, which is very helpful.

Miss Wicks: May I just comment on this? In our judicial system they can't give any orders to any mental hospital within the court without the consent of the offender, and the cooperation of the offender.

Dr. Hoffer: I think that is true but then the offender has the choice of going to jail or having the treatment; and they usually are very intelligent.

Dr. Blair: This is a very interesting paper, and I am sure we all agree. I have the advantage or disadvantage of living in the United Kingdom, and therefore I am interested in what has been said, and I am particularly interested in what is done in Canada—that they can suspend sentence providing the offender has LSD treatments. This has not happened in the United Kingdom. I am not clear whether the speaker is vindicating LSD or whether she has had the experience of other centers where there was no LSD treatment, to be able to prove or show that LSD is really producing substantial benefits in cases of this type. I think that Powick has a well organized social system, cooperation between psychiatrists and social workers and probation officers, etc. This is a tremendous advantage. But Nottingham also has an extremely good one, and I am wondering whether the speaker is trying to say that LSD treatment produces something in Worcester, for example, produces something that has not been produced elsewhere. I am also interested in the fact that the probation officer is taking part in the LSD treatment and helping the patients to acquaint themselves with experiences as a result of this treatment. This is something that must be comparatively rare in the United

Kingdom. I think it indicates something exceptional in the United Kingdom.

Miss Wicks: I hope I made it clear in my paper that this is my own experience; I'm not especially familiar with what happens in other parts of the country and elsewhere. But from the point of view of LSD treatments, I am in a very favorable situation here, because it is such a nice, comfortable arrangement; I have had no doubt of it. But on the other hand, one mustn't get in a rut. I have university links and hospital links which I hope keep me up to date. I have been in this work for twenty years, long before LSD was ever introduced to the hospital. I was one of the first probation officers who worked with ex-prisoners. Because they came back to me, they asked me if I could help them since I had had them for several years. I have seen some of these chaps—they have had LSD—it has been sort of a last resort, and it has been hit-and-miss. They are twenty miles from the hospital, and the hospital can't give them all the support they need. They have to use a caseworker. This is why we have the service training plans, to get them this support. I may be sticking my neck out, but I feel that I am in a position to judge on this. I have tried to help these people by means of casework plus referring them to the hospital. One man, with thirteen convictions for rape and other serious offenses with long sentences, came for treatment. You may say that at his age it was hopeless, but I don't feel this way. He was desperate for help and wanted to change. Now the one which I quoted in detail in my paper and for which we have the tape recordings to support it, I have never worked with anybody where the changes were so rapid. I had unsuccessfully worked with this man for a year.

Dr. Osmond: I think that the one thing which seems to be very well emphasized is the effect this has on the whole family. One thing that comes out very clearly is the change for the better; they do benefit when one member of the family becomes more adult.

Dr. Dahlberg: Dr. Blair, I believe, commented on the enlightened attitude, but it was somewhat of a surprise to me to hear Miss Wicks say that the psychiatrists in this enlightened area did not understand that when you improved a member of the family, this might cause family disruption. This, I believe, is commonplace and has led to so-called family therapy, etc., in this country. Certainly it is commonplace in casework. I believe it is a part of psychiatric practice at present. Is this a usual thing that your psychiatrists don't understand? Or is it merely a side comment?

Miss Wicks: I think you misunderstood me. I said the psychiatrist was using the social worker to do this side of the work.

Dr. Dahlberg: Oh, I see. I did misunderstand you then.

Dr. Fremont-Smith: I think it is also fair to remind ourselves that a good many American psychiatrists, working in their private offices, haven't even seen what a caseworker looks like for forty years. Now when you can find a grandmother caseworker looking like seventeen, then you feel that you have been missing something.

Dr. Rinkel: I want to report that there are research projects going on in Boston, mainly in the use of LSD in jails on prisoners, in order to bring about a change in their attitudes. It has been reported or claimed that LSD brought about, instantaneously, personality changes which were beneficial in that the prisoner did not resume his criminal activities. I don't know whether it was published.

Dr. Fremont-Smith: We have heard other accounts of changes in people who were not criminals, so this is not unknown, but we have a lot yet to learn on both aspects of it. Do you want to say something on this, Miss Wicks?

Miss Wicks: I can't say that I have experienced instant change.

VI

CHILDHOOD SCHIZOPHRENIA

Preliminary Method for Study of LSD with Children

André Rolo, M.D., Leonard W. Krinsky, PH.D., L. Goldfarb, M.D., and Harold A. Abramson, M.D.*

INTRODUCTION

There have been many reports in the literature on the therapeutic benefits to be derived with the use of LSD 25 (d-lysergic acid diethyl amide). Most of the previous studies were conducted with an adult population. Murphy, (2) however, described treatment of children. Recently Bender (1) described a study in which fourteen schizophrenic children were treated with some success with LSD and UML 491 (1-methyl d-lysergic acid butanolamide). In discussing her findings, she indicated most favorable results. All children who were given LSD and UML daily for one month were said to have improved. Side effects, toxic reactions and regressive behavior were not encountered.

From the standpoint of the present study, it is important to note that Bender and her co-workers observed that children who continued in treatment had a "happier mood," became more spontaneously playful and participated with increasing eagerness in play with adults. Less stereotyped and whirling behavior was noted. In summary, all children showed improvement in motor function. It is equally important that *no* child showed a recordable gain in language.

Bender's technique in this area appears to be different from that reported here. From her description, judgments apparently were made by Psychiatrists and ancillary personnel who were making ward rounds. The use of replicable technique was not described nor does there appear to have been a systematic pattern for judging. This study was devised to supplement Bender's research with refinements in methodology. Inasmuch as she reported an absence of gain in language, it was decided to use silent motion picture films.

* From the South Oaks Psychiatric Hospital and Research Foundation, Amityville, New York.

PROCEDURE

Subject

S., 11 years, 9 months at time of admission, was hospitalized over a four-month period. A clearly defined diagnosis of childhood schizophrenia was made. His history was one of lifelong withdrawal, preoccupation and difficulty in attaining more than a marginal adjustment. His family reported symptoms over a nine-month period prior to hospitalization, but this coincided with the time he was first seen by a psychiatrist. Psychiatric examination at that time indicated he was markedly paranoid. By the time of his admission he had regressed, was running aimlessly about, ate metal objects, drank hair tonic, etc. He told his family he was a girl and a sex maniac.

In the hospital he responded to both auditory and visual hallucinations. He created neologisms as he went on in an echolalic fashion. Grossly disorganized thinking was encountered. He ate soap and shaving cream. Prior to the administration of LSD, he had been on Compazine 10 mg q.i.d. for three days. This was discontinued and he was started on 25 mg Thorazine q.i.d. for two days. A course of ten EST was administered, during which time he received no tranquillizing drugs. Immediately after termination of the course of EST, he received Stelazine 1 mg q.i.d for two weeks. It was increased to 2 mg Stelazine q.i.d. for six weeks at which time the present study was instituted.

Mental Condition Prior to LSD Study

The only apparent improvement noted was an absence of hallucinations. His attention span remained essentially non-existent and he was inaccessible to psychotherapeutic efforts. He would sit and rock for hours, mumbling, humming, and picking at his fingers. He had to be spoonfed and slept poorly. There were periods when he would suddenly become excited, threatening, and belligerent. He would shout, raise his hands over his head but rarely struck anyone.

Method

Tasks

On eight different occasions the subject was introduced to a series of motor tasks. His performance was filmed at these times. All tasks were a part of his usual response repertoire. They included playing with footballs and baseballs, catching, batting, drawing, playing checkers, playing cards, twirling, etc. S. was inclined to play with soap, shaving cream and toothpaste. These materials were also provided. The same attendants were assigned to him, played with him to the extent he permitted. One of the authors was present and the same photographer was employed. Testing took place in the same area of the hospital at approximately the same

time of day. Testing took place outdoors so that weather was, of course, uncontrolled.

Procedure

In order to hold the effects of extraneous variables to a minimum, there were no changes in S.'s management during the time the experiment was in process. Attendants continued to deal with him in the same manner. (They were unaware of the nature of the drug administered). There were no changes in the psychotherapeutic process, visits from his family were permitted as before, his diet remained the same, etc.

Inasmuch as Bender reports a lack of change in verbal areas, silent colored films were taken at regular intervals. Tasks were exactly the same for each filming. Wherein practicable, films were made at approximately the same time each day.

Filming took place on eight different occasions allowing for comparisons. These were:

Day 1	1. While receiving 2 mg Stelazine q.i.d.
Day 7	2. One week later. In past seven days he received a placebo q.i.d.
Day 14	3. During this week no medication was administered. This film was the control.
Day 14	4. Two hours later, after he had been administered LSD, 100 mcg.
Day 24	5. After having received 100 mcg LSD for preceding ten days. This was the attempt to replicate Bender's study.
Day 31	6. After having received the 17th dosage of LSD, 100 mcg.
Day 42	7. After the 28th administration of 100 mcg LSD.
Day 49	One week later. In the previous seven days no medication was administered.

RESULTS

Scoring Devices

A. A Likert-type questionnaire was constructed, measuring from "lack of improvement" through "much improvement" over a four-point scale. Judges were asked to indicate their opinions as to presence or lack of progress on the various tasks which had been presented to S. These included ability at playing ball, drawing, adeptness at simple games, soiling tendencies, twirling, etc.

B. Inasmuch as it was hypothesized that S. would be more active, better coordinated, etc., under LSD, it was expected that trained judges would be able to differentiate between films under the control of Stelazine and those under the psychotomimetic drug.

Mode of Presentation of Films

The films were presented in random order. In the first part of the experiment judges were to differentiate an LSD reaction from S.'s performance under control and under Stelazine.

In the second phase of the experiment judges were initially permitted to view the control film (3) following which time the films were again presented in random order. Each time the judges had to make a decision on lack of or presence of improvement, the control film was again shown.

Judges

Another facet of the experimental design was an attempt to compare judgments as made by professionals and non-professionals. Twenty-two volunteers comprised the judges. Of these, eleven were professionals (psychiatrists and psychologists) while the remaining eleven had neither professional training nor experience.

RESULTS

Ability to Distinguish LSD Reaction

Although a statistical design had been developed to deal with the data, this proved unnecessary. Inspection of the results indicated that there was a total lack of agreement amongst judges as to when S. was under LSD. Two judges (one professional, one non-professional) were successful in correctly numbering 5 of the 8 films. In going over their judgments, it evolved they were responding more to extraneous stimuli than to the subject's responses. Their judgments took into account the type clothing S. was wearing (less as the weather improved), the budding of trees, people passing by, etc.

Judgments as to Improvement

Several judges became discouraged after viewing half of the films and gave up. They indicated they found a total lack of improvement. Again, the statistical procedures can be discarded as simple inspection revealed almost unanimous agreement as to lack of improvement.

Comparisons of Judges

The negative findings failed to show any differences in ability to judge in this area between professionals and non-professionals.

DISCUSSION

Essentially, this technique was employed as a way of developing a methodology to study the effects of LSD in children. Subsequently, one of

our findings was that this experiment was more complicated than necessary. The need to identify a Stelazine reaction was not germane to this study. In spite of the fact that the experiment was well controlled and represented a replication of a study claiming improvement for all patients, this finding did not substantiate this. It would be invalid to dismiss the possible value based on one subject. It is distinctly possible that our S. was slightly older than Bender's population. He may have been in a prepubertal state which could very well have altered the results. The authors make no claims as to the value of LSD in treatment of children, and report this study for its value as a methodology. Present plans include utilizing this technique with a much larger population.

SUMMARY AND CONCLUSIONS

Repeated filming of one S. was completed in an attempt to replicate Bender's work with schizophrenic children who had been given LSD. Greater controls were introduced, trained and untrained judges were utilized, and objective scales were administered. Although findings on one S. were not to be considered definitive, results were negative. The study is reported as a useful methodology. Further work along these lines is indicated.

DISCUSSION

Dr. Cohen: Did you duplicate Dr. Bender's dosage schedule?

Dr. Krinsky: We followed her dosage schedule exactly. She gave LSD for a period of a month. We gave it for twenty-eight days.

Dr. Cohen: As I recall, she reports giving LSD up to eighteen months. The dosage was generally 150 mcg in two doses each day, 75 in the morning and 75 later on. Also, she definitely reports results on psychological tests. These are not consistent.

Dr. Krinsky: She reported a second study. We replicated her first one—her dosage, her treatment.

Dr. Fremont-Smith: I don't think there's any argument on this particular question. I think Dr. Cohen is referring to a further study on perhaps similar patients. I think it's confusing to bring up two different studies. This was a report on one study which was very meticulously copied; and you, I think, are talking about two or three subsequent papers.

Dr. Abramson: May I clarify this point? Because I'm involved in this study, too! Dr. Bender was invited to attend this conference, and I'm sorry she's not here. We had told her that we were trying to replicate her studies. So I only regret that she isn't here to take up Dr. Cohen's point of view. But I will say that Dr. Krinsky did follow her dosage schedule.

Dr. Ketchum: It appears that the authors have, in fact, replicated Dr.

Bender's study with the exception of one fact which they did not replicate in the name of Dr. Bender. I don't mean that entirely as a facetious remark because I think there has been evidence that the expectations and attitudes of the investigator in testing a drug may materially influence the outcome, even when careful controls are used in double-blind. Furthermore, with LSD I think there's been some evidence in this meeting that results may vary considerably with the personality of the user. I wonder if you have a comment on that.

Dr. Krinsky: What you're saying I think is true, too, that is, the personality of the investigator, even when he or she tries to remove himself, is certainly a factor, and I think this can be seen with people who try to use Rosen's technique. In this case, though, Bender did say that there were no efforts at psychotherapy other than the administration of the LSD.

Dr. Fremont-Smith: It's also fair to comment that this is one single case only, and that if nine cases or twelve cases had been studied, the results might have been entirely different; this is merely to illustrate the methodology of one single case, and I don't think it bears significantly on the results of therapy at all, any more than a single report would ever bear on the results of methodology.

Dr. Baker: I just would have thought the dose was low with this one child, and that most of it would be wiped out by tolerance effect.

Dr. Krinsky: That may have been. We probably developed some tolerance to LSD within this boy in five or six days.

Dr. Fremont-Smith: But presumably so did Dr. Bender's patients.

Dr. Eisner: I'd like to comment, because Dr. Bender is a woman. Most of the difficulties with any schizophrenic child, no matter how biochemical, are with the mother and the mother relationship. I think it would make an enormous difference whether a mother is there, or a mother figure is there, during an experiment or whether the attendants are men.

Dr. Dahlberg: I've read some of Dr. Bender's work on this, and one paper she gave about a year ago at the New York Regional A.P.A. meeting, which was much more extensive than this. We should not be confused that she is trying to do anything comparable to what the speakers here have done with LSD. She is giving fairly small doses over a long period of time; there is no attempt at psychotherapy here; and what she hopes is that there is some kind of a pharmacological or physiological effect that occurs. As for the question of the sex of the person who is giving the drug, the mere fact that Dr. Bender's name is on the paper does not mean that Dr. Bender is administering the drugs or has very much to do with the patients; there are all sorts of people who have to do with the patients of both sexes. I think that that point, insofar as this is concerned, is completely irrelevant. The patient would be tested by a number of psychologists and there have also been various chemical tests done, one way or another, which I can't recall at the moment.

Dr. Osmond: There's one point that I want to raise for my own enlightenment here. As I understand it, there is also some serious theoretical disagreement between Dr. Bender and particularly Dr. Kanner about the question as to whether there are not two entities of children in Dr. Bender's sample, that is, autistic children and schizophrenic children. I think this is a serious point which I've never been clear on. What you're describing is a schizophrenic child. There is a serious difference of opinion here.

Dr. Fremont-Smith: Well, we don't have Dr. Bender here; she described them as schizophrenic, did she not? I think we might also say that there is no common agreement on this situation; that childhood schizophrenia is composed of a variety of conditions which have certain similarities and we have quite a long way to go to get this straightened out.

Dr. Eisner: It makes a great deal of difference, I've found, taking LSD in groups. My groups under LSD have many more phenomena and need much less drug with a group situation than they do with a single individual session.

Dr. Hausman: Just one brief question. Your conclusion was that this methodology was successful. I'm not too clear on this, inasmuch as there was a total lack of reliability in the judges. Do you consider that this is proof of a successful approach? I think that it's an interesting approach to research, but I don't know that in your data you demonstrated this.

Dr. Krinsky: No, I don't think we did. I think we demonstrated that we had no positive findings. In this case, all we set out to do is to describe a methodology, and I agree with you, I don't know if LSD with children is effective.

Dr. Abramson: Dr. Krinsky mentions in his paper that the methodology was much too complicated, and that a simplification of the method would be better. Perhaps that answers Dr. Hausman. We really tried to study too many variables, and I think that caused confusion. As one of the observers told Dr. Krinsky, "It's just impossible." That is, if you try to study simultaneously the way people behave under four different drugs, you're really attempting to solve a most difficult problem. I still feel that if we do this again we'll just use placebos and LSD, and won't try to study whether chlorpromazine acts like LSD or not. That's another problem and unrelated to our study.

VII

EFFECT ON RELIGIOUS EXPERIENCE

The Contribution of the Psychology of Religion to the Therapeutic Use of the Psychedelic Substances

Walter N. Pahnke, M.D., PH.D*

INTRODUCTION

There have been two major methods employed in the use of psychedelic or mind-opening drugs (LSD, psilocybin, and mescaline, to name the major ones) in order to obtain the maximal therapeutic effect in psychiatric patients. The first method involves a small dose technique (25 to 100 mcg of LSD) in weekly or bi-weekly sessions to facilitate the release of unconscious material and aid psychotherapy or group therapy. This method is the predominant one used by LSD therapists in Europe.

Sandison and Spencer (1) pioneered this method and are continuing their work which stresses abreaction. Spencer (2) has recently written a review of modifications. Ling and Buckman (3) in their book have outlined their technique and have given representative case histories. Martin (4, 5) has employed LSD in the framework of a psychoanalytic approach. Leuner (6, 7) in Germany has been a leader on the continent. Van Rhijn (8) and Hein (9, 10) have been continuing and expanding their interest in LSD therapy in Holland. In Belgium, Aguilar (11) has used psilocybin with in-patients who receive intensive supervision and psychotherapy before, during, and after drug sessions. Alhadeff (12) in Switzerland has also found psilocybin useful as an adjunct to psychotherapy. In Sweden, Kaij (13) has employed an LSD technique which is similar to that used by Sandison and Spencer in England. Alnaes (14) has compiled a bibliography of the Danish and Norwegian LSD literature. Although not so much work is currently in progress in the United States, there have been clinicians who have advocated a similar approach with some modifications in technique. (15, 16, 17, 18)

The second method involves a much smaller number of psychedelic drug sessions or even a single one, but at a higher dosage in order to produce an experience with such an overwhelming impact as to change

* Resident Psychiatrist, Massachusetts Mental Health Center.

radically the patient's view of the world and himself in a healthful and therapeutic manner. Descriptions of this method have been written by Chwelos and coworkers, (19) MacLean and coworkers, (20) and Sherwood and coworkers. (21) See also Unger's excellent review article (22) and his description of the English language literature. (23) The striking similarity of some of these drug experiences to the reports given by mystics from many varying cultures and epochs has led some investigators to consider the possible use of this kind of drug experience as an aid in psychotherapy. Research in the psychology of religion may be of value in illuminating the second approach. Data from such research will be presented as an example of this possibility.

Examination of the Claim that Psychedelic Drug Experience May Resemble Mystical Experience

There is a long and continuing history of the religious use of plants which contain psychedelic substances. Scholars such as Osmond, (24) Schultes, (25) and Wasson (26) have made valuable contributions to this intriguing field. In some instances, such natural products were ingested by a priest, shaman, or witch doctor to induce a trance for revelatory purposes; sometimes they were taken by groups of people who participated in sacred ceremonies. For example, the dried heads of the peyote cactus, whose chief active ingredient is mescaline, were used by the Aztecs at least as early as 300 B.C. and are currently being employed by over 50,000 Indians of the North American Native Church as a vital part of their religious ceremonies. Both *Ololiuqui,* a variety of morning glory seed, and certain kinds of Mexican mushrooms (called *teonanacatl,* "flesh of the gods") were also used for divinatory and religious purposes by the Aztecs. These practices have continued to the present among remote Indian tribes in the mountains of Oaxaca Province in Mexico. Modern psychopharmacological research has shown the active chemicals to be psilocybin in the case of the mushrooms, and several compounds closely related to LSD in the case of *Ololiuqui*. *Amanita muscaria,* the mushroom which has been used for unknown centuries by Siberian shamans to induce religious trances, does not contain psilocybin. The most important psychologically active compound from this mushroom has not yet been isolated, but promising work is in progress. Other naturally occurring plants used by various South American Indian tribes in a religious manner for prophecy, divination, clairvoyance, and the tribal initiation of male adolescents, or sacred feasts, are cohoba snuff made from the pulverized seeds of *Piptadenia,* the drink, *vinho de Jurumens,* made from the seeds of Mimosa hostilis, and the drink, caapi, made from *Banisteriopsis.* These last three products contain various indolic compounds closely related to psilocybin, both structurally and in their psychic effects (bufotenine, dimethyltryptamine, harmine). Both LSD and psilocybin contain the indolic ring, and mescaline may be metabolized to an indole in the body.

An empirical study, designed to investigate in a systematic and scientific way the similarities and differences between experiences described by mystics and those induced by psychedelic drugs, was undertaken by the

author. (27) First, a phenomenological typology of the mystical state of consciousness was carefully defined after a study of the writings of the mystics themselves and of scholars who have tried to characterize mystical experience. Then, some drug experiences were empirically studied, not by collecting such experiences wherever an interesting or striking one might be found and analyzed after the fact, but by conducting double-blind, controlled experiments with subjects whose religious background and experience, as well as personality, had been measured *before* their drug experiences. The preparation of the subjects, the setting under which the drug was administered, and the collection of data about the experience were made as uniform as possible. The experimenter himself devised the experiment, collected the data, and evaluated the results without ever having had an experience with any of these drugs.

A nine-category typology of the mystical state of consciousness was defined as a basis for measurement of the phenomena of the psychedelic drug experiences. Among the numerous scholars of mysticism, the work of W. T. Stace (20) was found to be the most helpful guide for the construction of this typology. His conclusion that in the mystical experience there are certain fundamental characteristics which are universal and not restricted to any particular religion or culture (although particular cultural, historical or religious conditions may influence both the interpretation and description of these basic phenomena) was taken as a presupposition. Whether or not the mystical experience is "religious" depends upon one's definition of religion and was not the problem investigated. Our typology defined the universal phenomena of the mystical experience, whether considered "religious" or not.

The nine categories of our phenomenological typology may be summarized as follows:

Category I: Unity

Unity, the most important characteristic of the mystical experience, is divided into internal and external types, which are different ways of experiencing an undifferentiated unity. The major difference is that the internal type finds unity through an "inner world" within the experiencer while the external type finds unity through the external world outside the experiencer.

The essential elements of internal unity are loss of usual sense impressions and loss of self without becoming unconscious. The multiplicity of usual external and internal sense impressions (including time and space) and the empirical ego or usual sense of individuality, fade or melt away while consciousness remains. In the most complete experience this consciousness is a pure awareness beyond empirical content, with no external or internal distinctions. In spite of the loss of sense impressions and dissolution of the usual personal identity or self, the awareness of oneness or unity is still experienced and remembered. One is not unconscious, but rather very much aware of an undifferentiated unity.

External unity is perceived outwardly with the physical senses through the external world. A sense of underlying oneness is felt behind the

empirical multiplicity. The subject or observer feels that the usual separation between himself and an external object (inanimate or animate) is no longer present in a basic sense, yet the subject still knows that on another level, at the same time, he and the objects are separate. Another way of expressing this same phenomenon is that the essences of objects are experienced intuitively and felt to be the same at the deepest level. The subject feels a sense of oneness with these objects because he "sees" that at the most basic level all are part of the same undifferentiated unity. The capsule statement, "all is one," is a good summary of external unity. In the most complete experience, a cosmic dimension is felt so that the experiencer feels, in a deep sense, a part of everything that is.

Category II: Transcendence of Time and Space

This category refers to loss of the usual sense of time and space. This means clock time but may also be one's personal sense of his past, present, and future. Transcendence of space means that a person loses his usual orientation as to where he is during the experience in terms of the usual three-dimensional perception of his environment. Experiences of timelessness and spacelessness may also be described as an experience of "eternity" or "infinity."

Category III: Deeply Felt Positive Mood

The most universal elements (and, therefore, the ones which are most essential in the definition of this category) are joy, blessedness and peace. Their unique character in relation to the mystical experience is that their intensity marks them as being at the highest levels of the human experience of these feelings, and they are valued highly by the experiencers. Tears may be associated with any of these elements because of the overpowering nature of the experience. These feelings may occur at the peak of the experience or during the "ecstatic afterglow" when the peak has passed, but its effects and memory are still quite vivid and intense. Love may also be an element of deeply felt positive mood, but does not have the same universality as joy, blessedness, and peace.

Category IV: Sense of Sacredness

This category comprises the sense of Sacredness which is evoked by the mystical experience. The sacred is here defined broadly as that which a person feels to be of special value and capable of being profaned. The basic characteristic of Sacredness is a non-rational, intuitive, hushed, palpitant response of awe and wonder in the presence of inspiring realities. No religious "beliefs" or traditional theological terminology need necessarily be involved, even though a sense of reverence or a feeling that what is experienced is holy or divine may be included.

Category V: Objectivity and Reality

This category has two interrelated elements: (1) insightful knowledge or illumination felt at an intuitive, non-rational level, gained by direct

experience, and (2) the authoritativeness of the experience, or the certainty that such knowledge is truly real, in contrast to the feeling that the experience is a subjective delusion. These two elements are connected because the knowledge through experience of ultimate reality (in the sense of being able to "know" and "see" what is really real) carries its own sense of certainty. The experience of "ultimate" reality is an awareness of another dimension not the same as "ordinary" reality (the reality of usual, everyday consciousness), yet the knowledge of "ultimate" reality is quite real to the experiencer. Such insightful knowledge does not necessarily mean an increase in facts, but rather intuitive illumination. What becomes "known" (rather than only intellectually assented to) is intuitively felt to be authoritative, requires no proof at a rational level, and has an inward feeling of objective truth. The content of this knowledge can be divided into two main types: (a) insights into being and existence in general, and (b) insights into one's personal, finite self.

Category VI: Paradoxically

Accurate descriptions and even rational interpretations of the mystical experience tend to be logically contradictory when strictly analyzed. For example, in the experience of internal unity there is a loss of all empirical content an *empty* unity which is at the same time *full* and complete. This loss includes the loss of the sense of self and dissolution of individuality, yet something individual remains to experience the unity. The "I" both exists and does not exist. Another example is the separateness from, yet at the same time unity with, objects in the experience of external unity (essentially a paradoxical transcendence of space).

Category VII: Alleged Ineffability

In spite of attempts to tell or write about the mystical experience, mystics insist that words fail to describe it adequately or that the experience is beyond words. Perhaps the reason is an embarrassment with language because of the paradoxical nature of the essential phenomena.

Category VIII: Transiency

Transiency refers to duration and means the temporariness of the mystical experience in contrast to the relative permanence of the level of usual experience. There is a transient appearance of the special and unusual levels or dimensions of consciousness which are defined by our typology, with eventual disappearance and return to the more usual. The characteristic of transiency indicates that the mystical state of consciousness is not sustained indefinitely.

Category IX: Persisting Positive Changes in Attitude and/or Behavior

Because our typology is of a healthful, life-enhancing mysticism, this category describes positive, lasting effects which are the result of the experience. These changes are divided into four groups: (1) toward self,

(2) toward others, (3) toward life, and (4) toward the mystical experience itself.

(1) Increased integration of personality is the basic inward change in the personal self. Undesirable traits may be faced in a way that enables them to be dealt with and finally reduced or eliminated. Issuing from personal integration, the sense of one's inner authority may be strengthened, and the vigor and dynamic quality of a person's life may be increased; creativity and greater achievement efficiency may be released; there may be an inner optimistic tone with consequent increase in feelings of happiness, joy and peace. (2) Changes in attitude and behavior toward others include more sensitivity, more tolerance, more real love, and more authenticity as a person by being more open and more one's true self with others. (3) Changes toward life in a positive direction include philosophy of life, sense of values, sense of meaning and purpose, vocational commitment, need for service to others, and new appreciation for life or the whole of creation. Life may seem richer. The sense of reverence may be increased, and more time may be spent in devotional life and meditation. (4) Positive change toward the experience means that it is regarded as valuable and that what has been learned is thought to be useful. The experience is remembered as a high point, and an attempt is made to recapture the experience, or if possible, to gain new experiences as a source of growth and strength; mystical experiences of others are better appreciated and understood.

The purpose of the experiment in which psilocybin was administered in a religious context was to gather empirical data about the state of consciousness experienced. In a private chapel on Good Friday, twenty Christian theological students, ten of whom had been given psilocybin one and one-half hours earlier, listened over loud speakers to a two and one half hour religious service which was in actual progress in another part of the building, and which consisted of organ music, four solos, readings, prayers, and personal meditation. The assumption was made that for experiences most likely to be mystical, the atmosphere should be broadly comparable to that achieved by tribes who actually use natural psychedelic substances in religious ceremonies. The particular content and procedure of the ceremony had to be applicable (familiar and meaningful) to the participants. Attitude toward the experience, both before and during, was taken into serious consideration in the experimental design. Preparation was meant to maximize positive expectation, trust, confidence, and reduction of fear. Setting was planned to utilize this preparation through group support and rapport, friendship, an open and trusting atmosphere, and prior knowledge of the procedure of the experiment in order to eliminate, if possible, feelings of manipulation which might arise.

In the weeks before the experiment, each subject participated in five hours of various preparation and screening procedures which included psychological tests, medical history, physical examination, questionnaire evaluation of previous religious experience, intensive interview, and group interaction. The twenty subjects were graduate-student volunteers, all

from a middle-class Protestant background and from one denominational seminary in the free-church tradition. None of them had ever taken psilocybin or related substances before this experiment. The volunteers were divided into five groups of four students each on the basis of compatibility and friendship. Two leaders who knew from past experience the positive and negative possibilities of the psilocybin reaction met with their groups to encourage trust, confidence, group support, and fear reduction. The method of reaction to the experience was emphasized (to relax and cooperate with, rather than to fight against, the effects of the drug). Throughout the preparation, an effort was made not to suggest the characteristics of the typology of mysticism. The leaders were not familiar with the typology which had been devised.

Double-blind technique was employed in the experiment so that neither the experimenter nor any of the participants (leaders or subjects) knew the specific contents of the capsules which were identical in appearance. Half of the subjects and one of the leaders in each group received 30 mg of psilocybin. Without prior knowledge of the effects, the remaining subjects and the other leader received 200 mg of nicotinic acid, a vitamin which causes transient feelings of warmth and tingling of the skin, in order to maximize suggestion for the control group.

Date, were collected during the experiment and at various times up to six months afterwards. On the experimental day, tape recordings were made both of individual reactions immediately after the religious service and of the group discussions which followed. Each subject wrote an account of his experience as soon after the experiment as was convenient. Within a week all subjects had completed a 147-item questionnaire, designed to measure the various phenomena of the typology of mysticism on a qualitative numerical scale. The results of this questionnaire were used as the basis for a one and one half hour, tape-recorded interview which immediately followed. Sixth months later, each subject was interviewed again, after completion of a follow-up questionnaire in three parts with a similar scale. Part I was open-ended; the participant was asked to list any changes which he felt were a result of his Good Friday experience and to rate the degree of benefit or harm of each change. Part II (52 items) was a condensed and somewhat more explicit repetition of items from the post-drug questionnaire. Part III (93 items) was designed to measure both positive and negative attitudinal and behavioral changes which had lasted for six months and were due to the experience. The individual descriptive accounts and Part I of the follow-up questionnaire were content-analyzed with a qualitative, numerical scale by judges who were independent from the experiment and knew only that they were to analyze twenty accounts written by persons who had attended a religious service.

Prior to the experiment, the twenty subjects had been matched into ten pairs on the basis of data from the pre-drug questionnaires, interviews, and psychological tests. Past religious experience, religious background, and general psychological make-up were used for the pairings in that order of importance. The experiment was designed so that by random distribution one subject from each pair received psilocybin and one received

the control substance, nicotinic acid. This division into an experimental and control group was for the purpose of statistical evaluation of the scores from each of the three methods of measurements which used a numerical scale: the post-drug questionnaire, the follow-up questionnaire, and the content analysis of the written accounts.

A summary of percentage scores and significance levels reached by the ten experimentals and ten controls for each category or subcategory of the typology of mysticism, is presented in Table 1.

The score from each of the three methods of measurement was calculated as the percentage of the maximum possible score if the top of the rating scale for each item had been scored. The percentages from each method of measurement were then averaged together. A comparison of the scores of the experimental and control subject in each pair was used to calculate the significance level of the differences observed by means of the non-parametric Sign Test. As can be seen from Table 1, for the combined scores from the three methods of measurement, p was less than .020 in all

TABLE 1

Summary of percentage scores and significance levels reached by the experimental versus the control group for categories measuring the typology of mystical experience

Category	% of Maximum Possible Score for 10 Ss Exp.	Cont.	P <
I. *Unity*	62	7	.001
A. Internal	70	8	.001
B. External	38	2	.008
II. *Transcendence of time and space*	84	6	.001
III. *Deeply felt positive mood*	57	23	.020
A. *Joy, blessedness, and peace*	51	13	.020
B. *Love*	57	33	.055
IV. *Sacredness*	53	28	.020
V. *Objectivity and reality*	63	18	.011
VI. *Paradoxicality*	61	13	.001
VII. *Alleged ineffability*	66	18	.001
VIII. *Transiency*	79	8	.001
IX. *Persisting positive changes in attitude and behavior*	51	8	.001
A. Toward self	57	3	.001
B. Toward others	40	20	.002
C. Toward life	54	6	.011
D. Toward the experience	57	31	.055

categories except deeply felt positive mood (love) and persisting positive changes in attitude and behavior toward the experience where p was still less than .055.

Although this evidence indicates that the experimentals as a group experienced, to a statistically significant degree, a higher score in each of the nine categories than did the controls, the degree of completeness or intensity must be examined.

In terms of our typology of mysticism, ideally the most "complete" mystical experience should have demonstrated the phenomena of all the categories in a maximal way. The evidence (particularly from the content analysis and also supported by impressions from the interviews) showed that such perfect completeness in all categories was not experienced by all the subjects in the experimental group. In the data the various categories and subcategories can be divided into three groups in regard to the degree of intensity or completeness as shown in Table 2.

TABLE 2

Relative completeness* of various categories in which there was a statistically significant difference between experimental and control groups

(a) Closest approximation to the most complete and intense expression	(b) Almost, but not quite as complete or intense as (a).	(c) Least complete or intense, though still a definite difference from the control group.
Internal unity	External unity	Sense of Sacredness
Transcendence of time and space	Objectivity and reality	Deeply felt positive mood (love)
Transiency	Alleged ineffability	Persisting positive changes in attitude and behavior toward others and the experience
Paradoxicality	Deeply felt positive mood (joy, blessedness, and peace)	
Persisting positive changes in attitude and behavior toward self and life		

* Based on qualitative score levels and agreement among the three methods of measurement.

Criteria were the percentage levels and the consistency among different methods of measurement. The closest approximation to a complete and intense degree of experience was found for the categories of internal unity, transcendence of time and space, transiency, paradoxicality, and persisting positive changes in attitude and behavior toward self and life. The evidence indicated that the second group had almost but not quite the same degree of completeness or intensity as the first group. The second group consisted of

external unity, objectivity and reality, joy, and alleged ineffability. There was a relatively greater lack of completeness for sense of Sacredness, love, and persisting positive changes in attitude and behavior toward others and toward the experience. Each of these last eight categories or subcategories was termed incomplete to a greater or less degree for the experimentals, but was definitely present to some extent when compared with the controls. When analyzed most rigorously and measured against all possible categories of the typology of mysticism, the experience of the experimental subjects was considered incomplete in this strictest sense. Usually such incompleteness was caused by results of the content analyses.

The control subjects did not experience many phenomena of the mystical typology, and even then only to a low degree of completeness. The phenomena for which the scores of the controls were closest to (although still always less than) the experimentals were: blessedness and peace, sense of Sacredness, love, and persisting positive change in attitude and behavior toward others and toward the experience.

The meaningful religious setting of the experiment would have been expected to have encouraged a response of blessedness, peace, and Sacredness. In the case of love and persisting changes toward others and toward the experience, observation by the controls of the profound experience of the experimentals and interaction between the two groups on an interpersonal level appeared, from both post-experimental interviews, to have been the main basis for the controls' experience of these phenomena.

The experience of the experimental subjects was certainly more like mystical experience than that of the controls who had the same expectation and suggestion from the preparation and setting. The most striking difference between the experimentals and controls was the ingestion of thirty mg of psilocybin which, it was concluded, was the facilitating agent responsible for the difference in phenomena experienced.

After an admittedly short follow-up period of only six months, life-enhancing and life-enriching effects, similar to some of those claimed by mystics, were shown by the higher scores of the experimental subjects when compared to the controls. In addition, after four hours of follow-up interviews with each subject, the experimenter was left with the impression that the experience had made a profound impact (especially in terms of religious feeling and thinking) on the lives of eight out of ten of the subjects who had been given psilocybin. Although the psilocybin experience was unique and different from the "ordinary" reality of their everyday lives, these subjects felt that this experience had motivated them to appreciate more deeply the meaning of their lives; gain more depth and authenticity in ordinary living; and rethink their philosophies of life and values. The data did not suggest that any "ultimate" reality encountered had made "ordinary" reality no longer important or meaningful. The fact that the experience took place in the context of a worship service, whose symbols were familiar and meaningful to the participants, appeared to provide a useful framework within which to derive meaning and integration from the experience, both at the time and later.

The relationship and relative importance of psychological preparation, setting, and drug were important questions raised by our results. A

meaningful religious preparation, expectation, and environment appeared to be conducive to positive drug experiences, although the precise qualitative and quantitative role of each factor was not determined. For example, everything possible was done to maximize suggestion, but suggestion alone cannot account for the results because of the different experience of the control group. The hypothesis that suggestibility was heightened by psilocybin could not be ruled out on the basis of our experiment. An effort was made to avoid suggesting the phenomena of the typology of mysticism, and the service itself made no such direct suggestion.

Implications for Therapeutic Use

The data presented above suggests that indeed the basic psychological characteristics of the mystical experience can be facilitated and studied by the use of psychedelic drugs. The most important therapeutic implication is suggested by the ninth category, persisting positive changes in attitude and behavior, which were measured after six months. Although normal subjects were used and the changes measured were not removal of symptoms, the direction of change was toward more integrated, self-actualizing attitudes and behavior in life. Although the mystical experience has been called by many names—psychedelic, conversion, transcendental, peak, or one of cosmic consciousness—this realm of human experience should not be rejected as outside the realm of serious scientific study if it can be shown that a practical benefit can result. This can be tested. Our data would indicate that such an overwhelming experience, in which a person existentially encounters basic values such as the meaning of his life (past, present, and future), deep and meaningful interpersonal relationships and insight into the possibility of personal behavior change, can be therapeutic if approached and worked with in a sensitive and adequate way.

First, what have we learned about the best way to facilitate the mystical experience out of the variety of forms which a psychedelic drug experience may take? Preparation would seem to be very important. Who the patient is must be considered. In a sense, his whole life has been part of his psychological preparation, but the nature of his expectations, fears, etc., at the time of his drug session, may radically determine the direction his reaction takes. (The more the patient can trust his doctor the better his chances for a beneficial experience.) The establishment of a firm and trustful therapeutic relationship is essential, as in any productive psychotherapy.

The therapist or person who will be present or easily available at all times during the drug session should carefully plan the procedure with the patient in advance. Special attention should be paid to the environment in which the drug is given and to the stimuli to be introduced during the session. Beautiful surroundings are in general beneficial, but the setting must be adapted to the individual patient. An orthodox religious setting, while helpful to deeply religious persons such as ministers or theological students, might detract from the most meaningful experience of someone else. Music which intuitively appeals to the individual can be helpful, in

general, smooth, peaceful, and majestic music is best (Brahms' *Requiem,* or other classical music, especially with a chorus of human voices). Flowers, candlelight, and beautiful objects may also be used to set a general feeling-tone of peace and trust; confusion and unexpected stimuli definitely should be avoided.

The dosage level and route of administration also profoundly affect the kind of drug experience obtained. There are many interesting effects (such as visual changes and hallucinations) from psychedelic drugs even at low dosages, but the mystical type of experience appears to be best facilitated by the higher doses. Perhaps more of the drug is needed to make material available from the deeper levels of the unconscious. The very powerfulness of the experience helps patients, with proper preparation and encouragement, to go along more easily with the drug effects and not waste psychic energy fighting or resisting the drug. Certainly there is a dose-related effect in regard to the level of consciousness reached with sodium amytal interviews or general anesthesia. An adequate dose of LSD would be 4 mcg/kg; for psilocybin,.6 mg/kg; and for mescaline, 10 mg/kg. The speed of onset of action of the drug may influence the kind of experience, perhaps because of the effect of surprise with a sudden overwhelming of resistance. This is especially true of I.M. psilocybin which acts in a powerful manner within two minutes after injection. It is interesting that I.M. mescaline and LSD do not have this immediate kind of action. In the case of LSD, the I.M. route takes almost as long to act as the oral (about 30 minutes). The duration of action may be of importance; there is less time in the drug reaction with psilocybin (4-5 hours) than with LSD (8-10 hours) or mescaline (10-12 hours); this may be an advantage or disadvantage, depending on the time available. If the patient has a mystical experience, it is generally most beneficial for the work of integration to let the reaction run its course without interruption by barbiturates or chlorpromazine, which are used sometimes routinely to terminate the effect after a predetermined time. The positive mystical experience can generate an afterglow effect which can be very rewarding.

Secondly, what are the most effective ways in which to aid the therapeutic work of integration? Adequate time should be provided by the patient to work through the experience. The next day should be quiet, peaceful, and free from the duties and responsibilities of normal routine activities, so that the patient can think about and work on what was learned. The patient should be encouraged to put into words or pictures the significant parts of his experience.

Any therapist who wants to use psychedelic drugs should be trained under the supervision of those who are skilled in the administration of these drugs. If the therapist has not taken the drug himself, he should familiarize himself with the possible effects by talking to many patients who have had the experience and by sitting with and observing patients who are undergoing the treatment. This helps by making the therapist sensitive to the areas of content which may be brought into awareness by the drug experience. His own frame of reference will undoubtedly influence the interpretation and even the content of his patient's experiences through suggestion.

If the therapist is sensitive and familiar with the characteristics of the mystical experience, he can be of more help in making therapeutic use of the insights gained from such an experience. His emphasis should be on integration and application of the experience to everyday life. A danger can be that the patient may tend to view the experience as so much of another reality that it may seem a pleasant escape from his problems. The therapist can work against this possibility in the preparation before, in the support given during, and in the work of integration after the session.

If more than one patient has a session on the same day, even if the sessions are separate a group discussion and sharing after the drug effects are over serve to illuminate the meaning of the various experiences and to provide an effective means of group therapy; communication, closeness, and group solidarity are enhanced to a striking degree. Group therapy can supplement the individual therapy which is needed to help integrate the experience over a longer period of time.

Thirdly, what are the frequency and number of sessions needed when mystical experiences occur? It has been observed that the patients themselves are reluctant to repeat a mystical experience too soon; perhaps this is because of the characteristic of Sacredness. The release of a large amount of unconscious material no doubt needs time to be adequately integrated. The hope is that relatively fewer large-dose drug sessions would be needed to accomplish the same result as the more frequent and numerous low-dose multiple sessions. By the very nature of the impact of mystical experience, more time would be needed between sessions for the work of integration. The possibility arises that such sessions might be most useful at selected points during regular therapy when progress was blocked, but certainly only after a strong relationship of trust had been established.

DISCUSSION

These three questions—the best way to facilitate the mystical experience; the most effective means by which to aid the therapeutic work of integration; the optimal number and frequency of sessions—all can be tested experimentally. They are all facets of a much more basic question: can the mystical experience be therapeutic? Much research needs to be done in this area and perhaps the place to do it would be at a center where the best insights and trained personnel are available from psychiatry, clinical psychology and religion. An in-patient facility would be essential so that patients could be adequately prepared and then observed and helped afterwards as necessary. Screening could be done by medical history, psychiatric interview, and psychological testing; religious background and experience may also be an important variable and should not be ignored.

Theoretically there should be no reason why a patient could not be

referred to such a specialized center for intermittent psychedelic drug sessions. The therapist might want to be present during the session but, if not, he could use the material obtained in his ongoing therapy with the patient. The therapist's attitude toward the treatment would play a crucial role not only in the patient's expectation and preparation for the treatment but also in the kind of experience obtained. Whether such an arrangement would work out satisfactorily could be tested experimentally.

Not all types of patients may do well if mystical experiences are facilitated through the use of the high-dose technique. For some, the small-dose, multiple-session method may be better. Research is needed to answer this question as well.

With such powerful agents, the possible dangers must never be forgotten. As with any potentially pleasant experience, psychological habituation is possible. The possible deleterious effects from continual use over a long period of time are not known. This consideration would argue in favor of fewer treatments of maximal effectiveness and impact. If the supply of these drugs is administrated only through psychiatrists trained in their use, the danger of habitual use is minimized. Pre-psychotic or borderline individuals with weak ego-structure may be disintegrated and become prolongedly psychotic if given these drugs; proper screening should eliminate such patients. Most psychotic episodes evoked by these drugs are temporary; the incidence and severity of such reactions can be reduced by proper preparation before and handling during a drug session.

SUMMARY

Data were presented to show that psychedelic drug experience can be very similar to if not identical with the experiences described by mystics. A nine-category typology of mystical experience was defined and a double-blind controlled experiment was described in which normal subjects were given psilocybin in a supportive, religiously meaningful setting. The experiences of the experimental subjects were more like the mystical typology than those of the controls at a significance level well below expectation. The therapeutic implications of this kind of psychedelic drug experience were discussed in regard to the best way to facilitate mystical experience, the most effective means by which to aid the work of integration, and the optimal number and frequency of sessions. The challenging possibilities of future research in this area were suggested, and the possible dangers mentioned.

DISCUSSION

Dr. Osmond: Dr. Pahnke, I want first to congratulate you upon your contribution. Then I want to make one very serious criticism and one minor criticism. The serious criticism is this: looking through the

bibliography and seeing your Alma Mater, I see with great sorrow that the name of the greatest American psychologist who contributed most heavily to this field, and the man who introduced Freud to this country, has been omitted; and I do urge that this should be repaired. I don't think that a paper on this subject should appear, especially a good paper and a paper with such fascinating data, without William James's name being attached to it. That is, James would have delighted in this. He was at Harvard; I am certain he would have participated in this conference, and he would have been one of the first to do so. As you know, it was unfortunate that his weak stomach prevented him from enjoying peyote, and this was the only reason that he did not himself undertake this work; and I hope that you will repair this. Now, the next thing, regarding the idea of the one-shot experience: I think this is a mistake, although perhaps to some extent I may have been partly responsible for this. The actual evidence from the whole mystical literature, from which some of this is derived, was the fact that the idea was, as Aldous Huxley pointed out, that it is a free grace, as it were, for which you are then expected to do some work. You might say it is insight bought on the hire-purchase system, but you are expected to do something afterwards; and I'm sure that this has really been in everyone's mind. But I do hope that you will take my only serious criticism to heart, because I think it would be a great shame if James's name were not there.

Dr. Pahnke: I would agree one hundred percent with all of your comments. This work formed the basis for my Ph.D. thesis at Harvard, and in my thesis I give James full due. You probably agree no more strongly than I do with James, but I didn't want to include all my references to the mystical literature and to those scholars who have been interested in mysticism. I perhaps relied more heavily on Stace than on James.

Dr. Eisner: I think it's a beautiful job, and I'm particularly glad to see you break down the different categories, because it helps me; it helps resolve in my mind something that's bothered me. That's the invalid or pseudo-mystic or pseudo-cosmic experience. There are a couple of people who use LSD in Los Angeles, and when they first started using it, all of us in the area used to meet together for staff meetings. I would sit there with open mouth and hear how everyone and his patients were having the cosmic experience every time they had LSD. I couldn't figure it out. But their patients didn't change; this was the thing! And then they started telling me the way they would invoke these experiences by tricks and gimmicks. They might have them imagine they were in Belsen, and there were S.S. guards and their bodies were being destroyed by the flames. Then it would put them into a kind of cosmic state. I couldn't then understand why; but I see now, here, that this change in behavior is a very important variable to add to the mystic experience.

Dr. Baker: Could I ask about the terminology? I guess the people were given the material double-blind. But as the experience went on

and as the follow-up goes on, it is no longer double-blind, is it? We don't want to make a mistake.

Dr. Pahnke: It was double-blind as far as is possible, but probably more blind from the standpoint of the subjects rather than the experimenter. I think we all know, and anyone who has worked with these drugs knows, that it is very difficult to keep fooling yourself once the drug reaction starts. The subjects were not ever told, though, and in the six-month follow-up, even at the one-week follow-up, many of them said, "I want to talk about what I think I had," and I said, "I don't want to hear about it," and kept it that way. But my own guesses all turned out to be right, and the subjects were all one hundred percent right as well.

Dr. Cohen: I'd like to hear again what instruction or statement you made to the subjects, for giving them the drug before the service.

Dr. Pahnke: These subjects were all males; they were between the ages of twenty-one and thirty-five; most of them were first-year theological students; we recruited them at one particular seminary. We had one group meeting initially with all the subjects and gave them the California Psychological Inventory and a questionnaire which measured past religious experience and background. These data were used to match the twenty subjects into ten matched pairs, but the subjects did not know about any of this. They were told only that they would have the chance to participate in an experience in which we were going to give them psilocybin, so they did know what drug they were going to get. They were also told that some of them would not get psilocybin. This was to decrease any sense of suspicion, distrust, and experimental manipulation which might have led to paranoid reactions, and also provide a more uniform expectation. I wasn't at all sure that it was even possible to facilitate the mystical experience, but I was doing everything I could to try to get it. Then there were two more meetings: one, an individual meeting with me when I took a medical history, gave each one a physical exam, and talked in more detail about his past religious experience; there was also a meeting in groups of four with their two guides, to give them a feeling of group solidarity for extra support. The main thing told to them at that time was what I have already indicated, about trusting, not being afraid, and surrendering, but the experience itself was not described.

Dr. Cohen: So the expectation was that they would receive psilocybin, a name with which they had some familiarity.

Dr. Pahnke: This was in 1962, and at that time there had not been the mass sensationalism and publicity that later emerged. Most of the subjects had not heard much about either LSD or psilocybin.

Dr. Cohen: Were there any adverse effects in the control group, great disappointment or whatever?

Dr. Pahnke: These were people who all wanted to have the psychedelic experience, so I told them at the time of recruiting that the control group, six months later, after the study was over, would be able to have the experience. This decreased the disappointment at the time

of the experiment, but in the meantime there was much upheaval at Harvard, as I guess you all know, and I was not able to continue. Therefore, I could not offer the experience after the six-month follow-up. Then there was much disappointment; I was sorry about this.

Dr. Hoffer: I just wanted to ask Dr. Pahnke if he is ready to let me have his mystical experience questionnaire. I'd like to use it on all my patients.

Dr. Pahnke: Yes, I'd be glad to. I have extra copies, and it's also in my thesis, which is on file at the Widener Library at Harvard University.

Dr. Savage: Do you think that this experience makes a better or worse minister? Do people give up the ministry? Or do they become more devoted, or do they stay about the same as they were before? Would you hazard a guess on that?

Dr. Pahnke: My guess is that the people who stay in the ministry would become better ministers if they have the drug reaction under conditions which allow for having a positive experience. Now, let me tell you what happened. I have done follow-up studies on these people to see what's happened to them in the intervening three years. At the time of the experiment, one boy from Georgia who came from a very fundamentalistic background was struggling with himself over whether he should go into the ministry, whether he should stick it out; he had just about decided to leave the seminary. After this experience he realized that he did have a deep interest in religion, and that he did want to go on and get his B.D. degree. This enthusiasm carried into the next fall, but at that time he again reconsidered and decided to drop out of the seminary. After one year he went back and got a master's degree at the same seminary and is now the assistant dean of a college in the South, doing religious counseling, and feels that he's much happier with this. So he feels that the experience helped him to get his bearings and to do what he really wanted. One person in the control group and two persons in the experimental group left the seminary before the end of training. This is not a statistically significant difference.

Dr. Ketchum: In view of the outstanding way in which this experiment was designed and carried out, and the seemingly highly useful nature of the results, I'd be interested now in hearing comments from the people who stated that controlled or double-blind experiments were, in general, not necessary or not useful.

Dr. Abramson: Psychotherapy was not involved.

Dr. Fremont-Smith: You're asking for comments from others. I regret that this must remain the only comment from others; we've got to go back to the discussion of this paper.

Dr. Unger: This is not an answer, but I think there has been a somewhat irrational bias that has reverberated throughout this meeting. But that's because most of the people here are involved in and pressured by clinical responsibilities and duties, whereas Dr. Pahnke was not. He was doing a piece of research, patient research that took time

and opportunity. I don't think that there is a fundamental conflict that can't be resolved; I think, though, that many people who are involved in clinical work should be made aware of the necessity and the desirability of doing certain systematically controlled research, and not feel that we should come to the point where we consider it impossible to carry it out, because that's where much criticism of LSD research arises. Careful, controlled experiments are possible, but they involve the availability of enough time, proper facilities, and adequate training. Otherwise, such studies just cannot be done.

Dr. Pahnke: I might add that I did have full time to do this, and it took me a year and a half of solid effort to perform the experiment, analyze the results, and write it all up, because I had to do it all myself. I didn't have a grant, and it is time-consuming.

Dr. Rinkel: Professor Houston Smith of the Massachusetts Institute of Technology made a comment something like this: drugs appear able to induce religious experience. It is less evident that they can produce religious lives; but, although religion cannot be equated with religious experience, neither can it long survive its absence.

Dr. Pahnke: In my experiment, it was a very helpful thing that these students had a framework from which they came and to which they returned. They used their religious background as a way of interpreting the experience and utilizing the insights. I think the fact that they were going into religion professionally was a great help to them for integrating the experience in a useful way.

Dr. Ling: I'd like to ask the speaker to what extent this was a fair sample. You say it's a sample, you think, of the average religious student, but at the same time they volunteered for this. You do not think, perhaps, that volunteers are self-selective, and that's why they volunteered to answer their own problems? And, secondly, you stated that in order to get this experience you must produce a background that is symbolic and significant. Clearly a church is significant for a group of religious students, but would this carry over to, say, a law court, and how would it apply to an ordinary group of students?

Dr. Pahnke: This is the kind of experiment that would be useful to do in the future. Take a comparable group of people who are not professionally religious or even particularly interested in religion and give them the drug in a uniform setting. Another factor in the set could be controlled by comparing this group with another group of theological students or ministers. Then we could see whether both groups get the same experience. Now, the first point about the students being volunteers was true—they all volunteered. But remember, they were matched, and then randomly assigned to control group or experimental group, so I would assume that a fairly comparable population was assigned to the experimental and control group.

Dr. Ling: The only point I raised was that I have a counter-belief that volunteers volunteer for unconscious reasons.

Dr. Pahnke: Well, that may be so, but what I was trying to prove was

whether it was possible to facilitate this experience or not, and in the control group these categories definitely were not present; in the experimental group they were. That was all I was trying to prove.

Dr. Dahlberg: You might have just answered my question, but I was wondering whether there were any of the people in the control group who did get the religious experience, perhaps through suggestion or influence by the people around them.

Dr. Pahnke: Suggestion was the same for both through preparation and during the experiment. Then, as I pointed out, when I analyzed the data with the three methods separately, the content analysis showed no significant difference in the sense of Sacredness. You might expect this, because, in the control group, these people were ministers, too; they were in a Good Friday service; and they did have a higher score on Sacredness than any other category for the control group, but they didn't have things, for example, like unity, or transcendence of time and space, or as intensive an experience of deeply felt mood as did the experimental group.

Dr. Dahlberg: I'm not talking about statistics now, I just wondered—

Dr. Fremont-Smith: Did any of them have the experience, in the control group?

Dr. Pahnke: If you want to look at it that way, first you have to decide how many of the categories are to be considered necessary to the mystical experience.

Dr. Fremont-Smith: What's your definition of the experience, then? It's got to have the unity, and so forth?

Dr. Pahnke: Well, in order to decide which group had an experience which was more mystical, you must look at the statistics. You must compare one group against another, and you see whether by categories they have statistically-significant higher scores, one group or the other. Now if you want to break it down another way and consider subjects primarily, rather than categories, eight out of ten of the experimental subjects experienced at least seven out of nine of the categories. None of the control group, when each individual was compared to his matched partner, had a score which was higher; but some of the control group had scores which came up high enough to make the results not significantly different for some categories. Such statements really are not too significant unless you use groups of subjects compared statistically.

Dr. Fremont-Smith: Well, then, to the crude question, semi-crude question asked, whether any of the control group would be considered as having had—

Dr. Pahnke: Then you have to think about how high a score for each category you have to have in order to consider an experience mystical. If you look at Table 1, you will see, for each group, the percentage of the maximum possible for each score category. You can see what the control group score is and what the experimental group score is.

Dr. Fremont-Smith: Can we pull you away from the tables?

Dr. Pahnke: To take an individual case, there was one control subject

who scored fairly high on Sacredness and sense of peace and that—

Dr. Fremont-Smith: Did he think he'd had an unusual or—

Dr. Pahnke: And he himself, in his written account, said, "It was a very meaningful experience, but in the past I've certainly had one that was much more so."

Dr. Fox: The book by Maslow, called "The Psychology of Being," describes the transcendental experience as occurring without any drugs at all and, of course, he quotes James. It is what Freud called the oceanic experience. I have this quite often reported by my patients, particularly the artistic kind of person, and many of them use just the same phrases that you've been using. I know that, although such an experience may occur only once in a lifetime, it really is extremely important to that particular individual; he feels it with great conviction.

Dr. Pahnke: In a personal conversation with Professor Maslow, he said that he is, frankly, much more interested in these experiences at the lower level of the continuum. He said that spontaneously occurring peak mystical experiences certainly exist, but that they are so rare that he does not really find too many of them. He has studied mostly the ones that are still on the continuum, but at the lower end, like the woman who, during childbirth, has an ecstatic experience. I think I have demonstrated that, with psilocybin, it is possible to study the more rare, mystical experiences under controlled conditions.

Dr. Abramson: I would just like to return to the question of the double-blind procedure to amplify what I mentioned in connection with Dr. Unger's position. Major Ketchum, I think, thought that some of us here opposed controlled experiments, double-blind experiments, and the usual scientific procedures. I don't think that's true. I think what was meant by Dr. Fremont-Smith and myself and several others is that there are certain systems which are inherently incapable at present, because of poor methodology, of exploring with double-blind procedure. To reduce it to an absurd example, let's take one of Bridgman's problems: if you were to measure the distance from here to the moon by the velocity of light and by a yardstick, would the two agree? Well, you just can't do it, and I just don't think you can set up double-blind, controlled systems, if you're psychoanalyzing a patient. We just don't want to see poor methodology applied to systems where it cannot be applied. For example, I felt like attacking, just for the fun of it, the MMPI. And I've used that test for many years and published a few papers on it. When I started to use it, it was looked upon as a most disreputable test, because it was not projective. Now it suddenly has become so respectable that nearly everybody accepts it here. And I'm wondering why has this non-projective test suddenly assumed the cloak of respectability? Is it because it lends numerical elegance to physicians without clinical acumen? So, please bear with the clinician, as there are systems where you can't use the double-blind technique or the controls. Within-subject studies are certainly significant and cannot be

avoided. Certainly in my work on normal test subjects I've done nothing but use single-blind and double-blind techniques, as well as everything possible, such as repeated placebo studies, to make certain I wasn't getting hysterical reactions. But in psychoanalyzing the patient, at present, unless one uses within-subject data, the data are inherently incapable of being tested.

Dr. Fremont-Smith: Could I add one phrase? And that is, it's not the question of applying poor scientific method to a difficult problem; it's a question of applying a good scientific method to a problem which is not appropriate to this method.

Dr. Ketchum: Well, I'd like to say that I'm glad Dr. Abramson and Dr. Fremont-Smith made these remarks. Actually, in a sense, I suppose I was playing devil's advocate because I do believe that double-blind procedures are either totally impossible or inappropriate to most of the problems under discussion. But I wanted this brought out because I think most of the people here feel the same way.

Dr. Fremont-Smith: Thank you very much. Now, Dr. Pahnke, would you like to close?

Dr. Pahnke: I feel that this area of psychology and religion is an area for serious scientific study, especially with these drugs. I feel that my experiment was only a first step. Who knows what the implications might be just for the one discipline that was mentioned—the training of ministers? I think this is an area where we need the best brains and insights and sensitivity not only from psychiatrists, but also from philosophers, theologians, and psychologists. I think that in doing further work, the various factors can be isolated and tested for their influence—for example, factors of set, setting, preparation, expectation and, last but not least, experimenter bias. I think these things can be done with carefully controlled studies; if they're not double-blind, at least they should have some kind of controlled comparison group, as Dr. Levine mentioned yesterday. I'd like to say that, in one sense, I agree with Dr. van Rhijn in his point that perhaps we should keep moving ahead to gain clinical experience with a drug which seems to show therapeutic promise in difficult cases, and not be stopped by the lack of double-blind studies; but on my trip to Europe last year, when I visited most of the centers where LSD is being given, I was struck by the lack of control groups of any kind in Europe. They do have control groups in the sense that a patient can be his own control, but you can never be sure that these patients might not have gotten better spontaneously. Now I think my paper has been an introduction to the paper to follow, because the work that has been going on at Spring Grove State Hospital is an effort to try to work with the psychedelic, mystical experience in alcoholics and utilize the positive implications of this experience.

VIII

MECHANISMS OF ACTION IN MAN

On the Action Mechanisms of LSD 25

Antonio Balestrieri, M.D.*

Various approaches can be used to test the action mechanisms of LSD 25 and related drugs, each related to biochemistry, neurophysiology or psychopathology. We briefly abstract here types of research performed by us in recent years and compare them with the studies of other authors.

We started with studies on cross-tolerance in non-psychotic patients. The reaction was evaluated by the same observer rating effects from one to four in five classes (autonomic and kinesthetic, motor, emotional related to consciousness, psychosensorial). A statistical evaluation was based on the sum of points in each trial. Drugs examined were LSD 25, mescaline, BOL 148, JB 336, psilocybin (Balestrieri 1957, 1960, 1961[b]; Balestrieri and Fontanari 1959).

A tolerance to LSD 25 develops very rapidly after repeated administration of the drug for several days (Abramson *et al.,* 1956; Cholden *et al.,* and Isbell *et al.,* 1956). Our experiments in two subjects ruled out tachyphylaxis, since repeated administration of LSD 25 at six-hour intervals did not show any decrease of effect. We found that subjects who acquired a tolerance to LSD 25 are very resistant to mescaline. Tolerance to mescaline following administration of the drug itself was also observed in our subjects, but the phenomenon was less evident than with LSD 25. Subjects who became tolerant to mescaline were also resistant to LSD 25. Cross-tolerance between LSD 25 and mescaline has been confirmed in humans by Wolbach *et al.* (The phenomenon was observed in rats by Freedman *et al.)* Our research also showed a cross-tolerance between LSD 25 and psilocybin. This result agrees with data published by Isbell *et al.,* (1961).

We did not observe a statistically scientific tolerance to LSD 25 after repeated administration of BOL 148. With different dosages of BOL 148, some degree of a similar tolerance was, however, observed by Abramson *et al.,* (1958), and by Isbell *et al.,* (1959). We did not observe a cross-tolerance between LSD 25 and JB 336, a cholinergic blocking drug with hallucinogenic effect. A chemically related drug with a similar effect, JB 318, did not show cross-tolerance with LSD 25 in the experiments performed by Isbell *et al.,* (1964).

* Professor of Psychiatry, University of Bari, Italy.

In our subjects UML 491 (Methysergide; Sansert), a lysergic acid derivative having no hallucinogenic activity, greatly decreased the LSD 25 effects when administered for several days before LSD.

Abramson *et al.,* (1958) obtained a good resistance to LSD 25 by administering MLD 41, a lysergic acid derivative with a low hallucinogenic activity for several days. Rosenberg *et al.,* observed a very poor degree of tolerance to N, N-dimethyltryptamine (DMT) in subjects rendered tolerant to LSD 25.

The above mentioned results seem to indicate that cross-tolerance is not a constant phenomenon among hallucinogenic drugs, since JB 336, JB 318 and DMT do not appear in a similar relationship to LSD 25. On the other hand a non-hallucinogenic drug like UML 491 can provoke tolerance to LSD 25, chemically related to UML 49*. Cross-tolerance between LSD 25 and psilocybin can also be based on a chemical affinity. A similar affinity, however, is very difficult to conceive between LSD 25 and mescaline, since the hypothesis of the transformation of mescaline into an indole in the body is not supported by modern research on the metabolism of the drug. Isbell *et al.,* (1964) say that cross-tolerance studies appear useful in confirming the biological similarities and dissimilarities among psychotomimetic agents. The experiments performed by us and by other authors certainly prove the existence of different groups of drugs from the point of view of production of tolerance. A biochemical basis for classification is, however, still unknown.

Another approach to the action mechanisms of hallucinogenic drugs was attempted with the study of hallucinatory contents (Balestrieri 1961, 1964). Hallucinations are studied by a wide range of scientists, working in the fields of psychology, physiology, pharmacology, psychiatry and surgery who like to discuss them from very different points of view. Unfortunately, too many authors stress one set of factors to the exclusion of others. We have no general theory accounting for all hallucinatory phenomena.

According to Klüver's hypothesis, there are, however, some hallucinatory constants, probably related to various mechanisms at different levels in the nervous system. At present we know very little about these mechanisms, but can direct our research toward peripheral receptors, afferent paths, some cortical areas and particularly vestibular apparatus. Their activity might give us the reasons for certain characteristics (number, shape, size, spatio-temporal, situation, movement) that we find in the content of different sensations, of eidetic imagery, of synesthesias and hallucinations.

It seemed to us highly probable that hallucinogenic drugs have their effects at an "instrumental level" on sensory systems which belong to the above mentioned nervous mechanisms proposed by Klüver. Rough variations in all these structures can be further elaborated, at more psychic levels, in other brain areas having an integrative activity. In that way we could also attain images of a very complex nature.

* Editorial Note: See, however, paper in this volume by Abramson and Rolo.

A similar hypothesis for the hallucinogenic activity of drugs is very attractive. Before accepting it we must discuss, however, another possible mechanism for the activity itself. Studying hallucinatory phenomena in general, especially in mental patients, some psychopathologists put forward opinions based on the utilization of sensorial contents in some way previously stored in the central nervous system. We may remind you of the well known hypotheses of Tanzi, Pero, Buscaino and Goldstein. In more recent times, the experimental studies of Penfield with electrical stimulation of the temporal lobe also raised the question of possible evocation of images recorded and stored in some brain structures.

We analyzed the hallucinatory content of 86 experiments performed on 50 of our subjects who were either psychoneurotics or affected by neurological diseases. In half the experiments we used LSD 25, in the remaining half mescaline, psilocybin, JB 336, LSM 775 and BOL 148.

Our aim was to differentiate between simple hallucinations and the more complex ones. We considered as simple phenomena geometries, colors and sounds without significance, "stars," "lights," changes in shape, in number, in localization and so on; as complex hallucinations we considered images of persons and things, autoscopies, landscapes, etc.

Actually, we believe that a rough variance in the sensory systems or an interference with the nervous mechanisms supposed by Klüver are more apt to cause elementary or simple hallucinations, at least at first. More complex phenomena could derive from the activation of images already recorded and retained in the brain. We must also consider the gradual transition from simple to complex hallucinations reported by some of our subjects and also beautifully described by Baudelaire and A. Huxley. The further integration of elementary abnormal stimuli, mentioned above, could account for this phenomenon. On the other hand, it cannot be excluded that complex hallucinations reported alone are preceded or accompanied by simple ones, at least in some cases. A subject will probably pay more attention to the more significant images and may refer to them only.

Coming to our results, simple hallucinations appeared in a very large majority of trials (about 90 percent). In 80 percent of cases they were alone or preceded the appearance of complex hallucinations. The latter appeared in 20 percent of trials, but were reported alone in only 10 percent and never preceded the simple hallucinatory phenomena. It can be inferred from our data, and from the above mentioned considerations, that the pharmacological activity which is the origin of hallucinations is very probably related to some variances in the sensory systems, including nervous mechanisms connected with the perception of number, shape, localization and movement of images. The reactivation of complete images as recorded in the CNS seems unlikely, even if it cannot be positively excluded.

In the clinical field, our results give further support to the opinion that mental patients, too, may find a basis for their complex hallucinatory activities in some rather simple phenomena occurring in the nervous structures connected with the sensorial functions. As a matter of fact, the

gradual transition from simple to complex psychosensorial phenomena appeared to us a rather common occurrence.

Hallucinogens may be termed chemical agents having the ability to induce hallucinatory phenomena without any necessary occurrence of mental confusion. Nevertheless, there are peculiar conditions of consciousness due to the drugs which sometime lead to disorders of confusional type. We attempted to investigate the problem of giving LSD 25 to patients suffering from psychomotor epilepsy (Balestrieri and Fontanari, 1957). LSD 25 was administered (100 to 200 mcg orally) to eight subjects. In five of them we observed a clear tendency to reproduce, under the effect of the drug, psychopathological phenomena which had already appeared during the spontaneous seizures (visual hallucinations, sensation of blocking of thoughts, olfactory, taste and visceral sensations, preaccessual anxiety, and a peculiar head paresthesia). Our patients had the feeling that their usual ictal episode was repeated.

Further investigation was performed with 30 mg of amphetamine rapidly injected intravenously. This technique does not induce disturbance of consciousness in normal subjects. However, in four out of seven psychomotor epileptics it produced transient outbursts with confusional and hallucinatory manifestations, which also tended to imitate the usual seizures although less evidently than with LSD 25 (Balestrieri, 1959). EEG controls performed during all trials with amphetamine and during three of the five positive cases of LSD 25 experiments never gave signs of an epileptic activation. Patients during psychomotor epileptic attacks seem to have a low threshold for drug induced mental disturbances of the confusional type. This observation raises the difficult question of the role played by a similar disposition in the epileptic symptomatology. M. Dell, stressing that every episode of epilepsy is a dialogue between the paroxysmal phenomenon and the psychophysiological background, asks herself whether some psychomotor attacks have a psychic character just because of the peculiar background existing in the subject. H. Ey affirms that a low threshold for a consciousness destructuration, due to different etiologies, can be associated to a slow progressing outcome of the symptomatology. This could be the case of psychomotor epileptics, showing what the author calls the *"crise graduo-comitiale. "*

In our opinion, the subject, owing to an affinity for the dream-like hallucinatory state due to the drug, or an epileptic dreamy state, tends to relive with greater ease those psychic experiences, often related to his previous life, which appear repeatedly during the seizures and which are therefore impressed on his mind through facilitation or conditioning processes.

As regards the hypothesis of Penfield on memory mechanisms, we prefer not to consider the temporal lobes as storehouses of memories, but rather as neurological structures primarily involved in the regulation of consciousness. We believe that a peculiar disposition leads some subjects to react with dream-like manifestations when their temporal lobes are altered by an epileptic discharge, a stimulating electrode or involvement in a drug action. The hallucinatory content does not depend, in our

opinion, on the direct stimulation of a ganglionic pattern being the substrate of an engram, but on the psychological organization of the subject, as in normal dreams or in hallucinatory psychoses. As said before, some contents may be especially facilitated.

In conclusion, we must remember that an analogy between psychical conditions under the effect of hallucinogenic drugs and psychomotor attack has been stressed by many authors (Weber and Jung; H. Ey; Schwarz *et al.,* Bercel *et al.*). Our experimental results give further support to this analogy and we believe that it is quite probable that consciousness modifications due to LSD 25 depend on a pharmacological action at least partly directed to the structures of temporal lobes.

DISCUSSION

Dr. Fremont-Smith: Did the patients, the neurological patients, know what they were getting?

Dr. Balestrieri: No.

Dr. Fremont-Smith: Did they know they were going to get LSD?

Dr. Balestrieri: No.

Dr. Fremont-Smith: What did they expect? What did they think they were getting?

Dr. Balestrieri: They thought they were getting their usual treatment.

Dr. Fremont-Smith: You don't think they knew what the others anticipated?

Dr. Balestrieri: No. These experiments were made at a certain time, and the patients had no opportunity to compare treatments.

Dr. Pahnke: I would like to comment on your results of the tolerance studies and refer back to the work done on goats at the Worcester Foundation. Giving LSD to goats every day for two weeks produced psychical tolerance. In other words, giving the same dose every day, on the fifth day the initial response was the same. The LSD response came back again even though LSD had been given previously five days in a row. In your work with man, how many days did you give LSD?

Dr. Balestrieri: In order to obtain complete tolerance, from five to seven days.

Dr. Pahnke: Did you keep giving the drug every day?

Dr. Balestrieri: We used it in increasing doses. We started with low doses and increased them every day. In some subjects we obtained a good tolerance to 200 mcg.

Dr. Pahnke: In Isbell's work he gave it for three days to establish tolerance and then quit. I wondered if you kept on going for, say, a week or fourteen days, giving it every day?

Dr. Balestrieri: Not for more than eight days.

Dr. Fremont-Smith: Dr. Abramson can answer this last question.

Dr. Abramson: I can't answer it in great detail, but I can present some data obtained using the Cold Spring Harbor Questionnaire.

Subject A received 100 mcg of the drug on six successive days and once again five days later. Table 1 indicates the psychic areas in which changes were reported and the total number of times psychic changes were reported during the day. The subject was questioned

TABLE 1

Number of Times Subject A Had Certain Psychic Changes
(Subject was questioned six times during each of seven experiments with 100 mcg of LSD 25.)

	Number of times changes were reported Day						
Area	1*	2	3	4	5	6	11
1. Motor behavior	4	0	0	0	0	0	0
2. Control	0	0	0	0	0	0	0
3. Consciousness	0	0	0	0	0	0	0
4. Concentration	0	0	0	0	0	0	0
5. Mood	0	0	0	0	0	0	0
6. Attitude toward environment	0	0	0	0	0	0	0
7. Orientation	0	0	0	0	0	0	0
8. Memory	0	0	0	0	0	0	0
9. Hallucinations	3	1	0	0	0	0	0
Total	7	1	0	0	0	0	0

* Subject was questioned only five times on this day.

six times. There were hallucinations on the first two days and changes in motor behavior on the first day. On subsequent days the subject was normal in all areas.

Figure 1 shows the total number of questions receiving positive responses during each question period on each experimental day and the total number of responses made each day.

The subject responded at ½, 1½, 2½, 3½, 4½, and more than 4½ hours after receiving the drug, except on the first day when there was no response during the last interval. The boxed insert on the figure shows that the total number of responses went from 30 to 13, to 15, and to 7 on the first four days, and then up to 10 on the fifth, and 13 on the sixth. Five days later, when the subject again received 100 mcg of LSD 25 she gave a total of 19 responses. On the fifth day a decreased response occurred only during the first ½ hour. The maximum number of responses given during the last three intervals was two on all but the first day. On the eleventh day the number of responses given was greater than on the second day (except for the first ½ hour) but not as great as on the first day.

Dr. Van Rhijn: I should like to comment on the tolerance between LSD and psilocybin. When you give first LSD, let us say 200 mcg, and after two hours in the same patient 6 mg of psilocybin intravenously, you get a typical reaction; no tolerance is observed. But the reverse is not true. When you give first 6 mg of psilocybin intravenously and

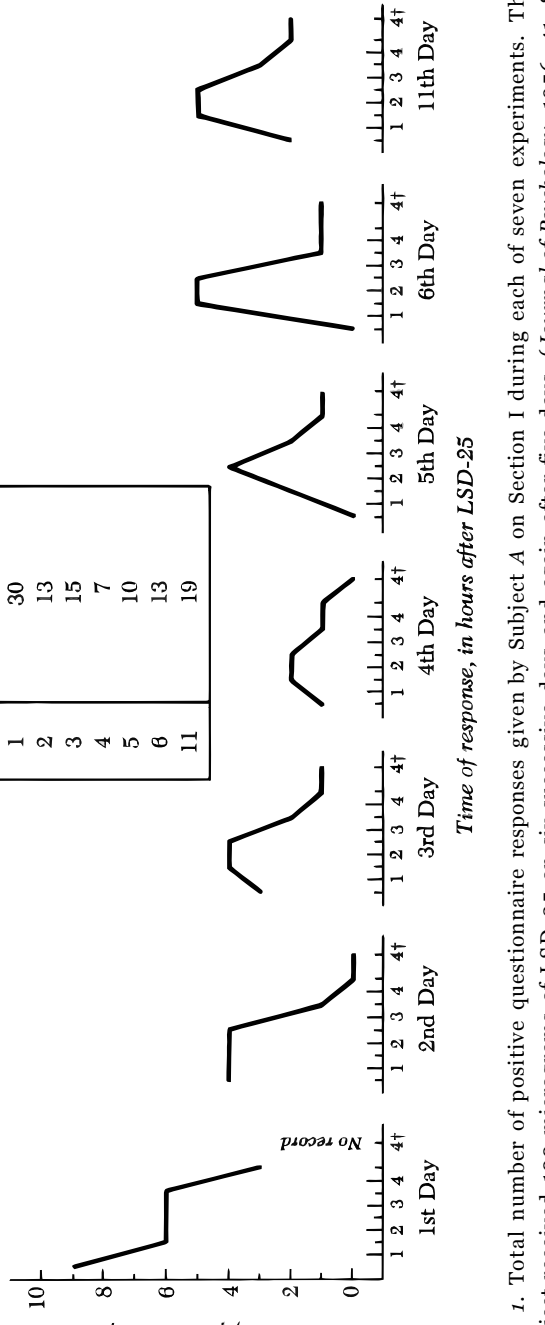


Fig. 1. Total number of positive questionnaire responses given by Subject *A* on Section I during each of seven experiments. The subject received 100 micrograms of LSD-25 on six successive days and again after five days. (*Journal of Psychology,* 1956, 41, 81-105)

two hours later 200 mcg of LSD, there is a great tolerance for LSD. I would like to know if you have an explanation for this.

Dr. Balestrieri: It could be that this phenomenon has to do with a cross-tolerant effect of LSD. That's the only explanation I can think of.

Dr. Freedman: I would like to comment. There are no simple ways of explaining tolerance. It is simply an operational definition. When we speak of tolerance, it is simply an estimate of effect contingent on our dosage schedule. Dr. Balestrieri's work has always been very interesting in segregating various phenomena, but we don't know the mechanisms. When you are studying tolerance you have to study the dose, the interval, etc. You may get different phenomena if these are varied. In rats, for example, you can give a low dose and get no tolerance; at 200 mcg, however, you get some tolerance. What is interesting about tolerance in rats is that not all signs or effects of the drug show tolerance. If you could ever systematically observe in humans which effects do show tolerance, and which don't, we could begin to look at the brain for underlying mechanisms.

Dr. Ketchum: Dr. Balestrieri referred to cholinergic blocking agents as hallucinogenic drugs. It's true that this class of compounds produces hallucinations, as do atropine, scopolamine, bromides, alcohol, barbiturates, lead, etc. Would you be inclined to extend the term hallucinogenic to all these possible causes of toxic deliria?

Dr. Balestrieri: Do you mean definition of hallucinating drug?

Dr. Fremont-Smith: Remember what I said about definitions? They are good only for specific purposes. Give a definition for this morning, but don't try to give a general definition.

Dr. Balestrieri: I call a hallucinogenic drug a drug which gives hallucinogenic phenomena without the necessity of confusion phenomena.

Dr. Osmond: Just a point: this question on the elaboration from very simple distortions to extremely complex ones is extremely important. Much of the psychotic phenomena can far better be understood in these terms. The question of time, which is so extremely important in these studies, doesn't receive as much attention as it deserves. So much depends on time.

The Mechanism of the LSD Treatment as Viewed from the Aspect of Learning Processes

Mogens Hertz, M.D.*

After working for the last four years with LSD treatment, I have gained the impression that psychotherapy in general and LSD treatment in particular are a question of stress and learning. The most important contributions to scientific research regarding the relation between stress and learning have come from the stress research and motivational psychology (14), which so far can be said to represent two aspects of the same subject. Numerous animal experiments demonstrate a connection between stress and learning processes as well as the plasma Cortisol concentration and the learning processes.

My subject for this symposium is supported by the following research. Gellhorn and co-workers (7) have shown in several experiments that conditioned responses are more strongly influenced by endocrine relations than the unconditioned. He also demonstrated (8) the re-establishment of an extinguished conditioned response in rats in a stress situation accompanied by a rise in the plasma Cortisol level, a phenomenon which is not altered by coagulation of the adrenal medulla region.

During a severe stress-situation (water-overflow of the cage) all the conditioned responses of Pavlov's dogs were abolished.

Ganong and co-workers (4) injected LSD into anesthetized dogs and followed the plasma Cortisol, epinephrine and norepinephrine concentrations in the suprarenal vein. They found no significant differences between the dogs and the controls as to epinephrine and norepinephrine, but a slight, but significant rise in Cortisol secretion. The increase seen in connection with a subsequent laparotomy and ACTH injections was unaffected by an injection of LSD.

Marazzi (15) observed in EEG registrations from cats with electrodes implanted in the reticular formation of the brain stem that LSD injected in the artery just before its entrance into the reticular formation of the

* Assistant Chief Physician, Frederiksberg Hospital, Copenhagen.

brain stem, produced an increased inhibition in synaptic activity concerning the sensory input, but not the output of impulses.

In psychiatry, research in stress and learning has dealt mainly in experiments with brainwashed soldiers, sensory deprivation (13), volunteers and patients treated for neurotic reactions with LSD (10) (11).

Hartmann and Hollister made these findings after testing twenty patients with LSD (1 mcg/kg):

1. *Clinical observations:* many of the somatic perceptual and psychic symptoms and signs changed to abnormal phenomena, varying from patient to patient, but all supported the impression of a stress situation.
2. *Biochemical observations:* the authors found that inorganic phosphorus in urine and FFA, and eosinophiles in blood showed changes suggesting a stress situation.
3. There was no change in the rest of the parameters: leucocytes, ceruloplasmine, pseudo-cholinesterase, alkaline phosphatase, SGOT, glucose, cholesterol, total lipids and creatinine.

Skaug and Alnaes (18) found the same clinical picture of stress condition.

Biochemical observations: No changes in plasma-potassium, -sodium, -calcium, -magnesium, or -ceruloplasmin, but significant changes in plasma-cortisol values, varying from individual to individual, and under different circumstances.

I have personally treated—or supervised the treatment of—about sixty patients with LSD (more than 600 single treatments) over a period of two years. Recently I have undertaken an investigation of a group of patients in regard to the stress effect of the LSD treatment and its relation to learning processes, especially habits. In the team working on this investigation, I am the clinician. The work was divided in two parts:

First: a clinical-biochemical investigation of the changes during the single treatment.

Second: a questionnaire consisting of the following:

"Do you think the LSD treatment has influenced your habits and attitudes?"

"Have you learned something new, especially relating to your ability to master the situations in which you experienced a nervous reaction for which you were treated with LSD?"

"What is the opinion of your relatives on these subjects?"

In the clinical-biochemical part of the investigations 12 patients participated. They were chosen without any special criteria. From the clinical point of view all of them showed symptoms of a stress situation, aside from the specific symptoms originating from the LSD. The most stressed pa-

tients complained of physical exhaustion, emotional frustration, perplexity, feelings of being in a helpless situation and showed paradoxical reactions. Many of them also complained about a lack of will, dependency (suggestibility) and indifference ("all things mean the same to me").

The stress situation varied from severe to slight. Furthermore, the state in most cases has oscillated between a clear positive and a negative psychic state accompanied by a slight euphoria or depression, an over- or under-estimation of time (1 and 10 seconds were estimated twice in each phase), anxiety-relaxation, sweating-dryness, motor over- and under-activity and other symptoms indicating stress phases.

Many characteristics in these states, observed by the staff and/or mentioned by the patients themselves, are similar to those reported on in experiments with sensory deprivation and brainwashing (for instance, as described in Sargent's "Battle for the Mind"). (16)

The biochemical investigations on blood concerned potassium, sodium, creatinine, PBI and Cortisol. The tests were performed according to this plan: after establishing an individually effective dose of LSD, the Cortisol determinations were obtained on an arbitrary day of treatment as far as possible under basal conditions:

1. At 8:00 A.M., immediately before injection of the LSD.
2. At about 11:00 A.M., when the maximum of the LSD effect is known empirically to have passed.
3. At 4:00 P.M. when the LSD effect is known to have subsided.

On the controlling day, chosen as far from a treatment day as possible, analyses were made in the same manner at 8:00 A.M. and 4:00 P.M. PBI was obtained the morning following a day of treatment and at 8:00 A.M. on the controlling day. The rest of the determinations were obtained at 11:00 A.M. on the treatment day and at 8:00 A.M. on the controlling day. All of the determinations were made after the patients had experienced at least five LSD treatments. The determinations were made at standard intervals independent of the conversations I had with the patients during the treatment period and in between. These conversations must be characterized as unorthodox psychotherapeutic talks consisting mainly of "anti-fear" treatment, including a provoking deepening of positive, verified acute psychotraumata or long-lasting psychic stresses reported by the patients themselves.

Special methods employed: Plasma-cortisol; techniques described by E. Bojesen, with a technical deviation of 0.5 mcg %; serum creatinine; Technicon autoanalyzer; PBI: Barker's method.

The results are shown in Table 1 and Figure 1. No significant changes were seen in the potassium, sodium and creatinine. PBI showed small changes (difficult to interpret) concerning stress, but the investigation of this parameter is continuing.

Figure 1 shows a slight but significant increase in the plasma-cortisol

values in connection with the LSD treatment and in relation to the controlling day values. The straight lines connect the three values of the treatment day; the dotted line connects the control values. The first value on the treatment day is a kind of a special situation control.

In the second part of the investigation eight patients participated. They all agreed that they had learned a great deal and changed one or more habits in connection with the treatment.

There were 13 answers from these eight patients. Their answers, translated from Danish, are:

1. "This is a total reconstruction of habits and of what I had learned before, at least concerning myself."

2. "I have gained a widened self-knowledge. A worried feeling of involuntary urinating has disappeared since I had the feeling that I could influence the urinating, and now I feel good."

3. "My long-lasting feeling of paralysis of the left part of my whole person has disappeared."

4. "My stuttering of many years has disappeared."

5. "I have automatically quit my old habit of thinking of unpleasant things."

6. "I have stopped crying as a means of obtaining attention."

7. "My tendency to feel giddy every time I stood on my feet has gone."

8. "Now I dare to lock the door to the rest room without fear of being ill."

9. "I no longer fear falling on the floor when I sit down in a chair."

10. "I can no longer feel my pulse hammering unpleasantly all over my body when I lie down."

11. "It is no longer necessary for me to leave a shop as quickly as possible without counting the change when I go shopping."

12. "I no longer feel myself as two persons."

13. "Today I dare to have all the strong feelings I formerly avoided."

During the treatment, all the patients talk of feeling "just a small distance from the truth," and are forced or seriously drawn to work hard to reach it. Some compared these situations to passing an examination, or to other situations where they were hard pressed, as well as to situations in which they merely solved an easy problem. All patients also report that they feel "more mature"; that they now dare to face all feelings and thoughts and find it much easier to solve new problems and master new situations, especially those which have to do with personal contact.

These observations have been confirmed by their relatives. However, two patients claim neurotic reactions in connection with the treatment. Most of these reports are confirmed by four control investigations of 127 patients treated with LSD and followed up on an average of two and a-half years after the LSD treatment, during which period none of the neurotic reactions had returned.

DISCUSSION

Concerning Marazzi's observations, it can be pointed out how far we are from extrapolating from cat to man. But the great changes in reality testing, seen in all LSD-treated patients, support his interpretation.

Concerning the Cortisol control tests it must be said that in relation to investigations on the daily variation of the plasma Cortisol level (1) (2) (19), the Cortisol controls in the present investigation must be considered maximum values, especially the 8: 00-9: 00 A.M. value which is the greatest throughout the day when the patient is only routinely stressed.

More frequent Cortisol determinations would be helpful but were impractical because the method of determination requires 50 ml of blood.

The clinical separation of a high tolerance and a low tolerance group of patients was conducted before the results of the biochemical examinations were obtained and were based on a purely clinical estimation of high and low tolerance to emotional stress carried out by two members of the staff during the LSD treatment.

The control represented in the 8: 00 A.M. value of Cortisol on the treatment day must be considered an expression of the stress effect of expectancy, apparently because the patients in the same two groups had respectively high and low psychic tolerance.

Table 1 which includes values of PBI and plasma-potassium, -sodium and -creatinine is incomplete partly owing to single blood samples lost and partly due to the condition of the patients during the treatment (which occasionally made it impossible to obtain the samples).

During a single treatment I observed many times that the patients clearly oscillated in mood, vegetative state, motor reactions, fear, etc. These oscillations also changed in intensity and duration, but corresponded to the oscillation under stress described by Selye (17) and especially Hoff (12).

CONCLUSION

LSD *directly* causes a slight and constant rise of the basal plasma cortisol-concentration. *Indirectly* it also works as a powerful psychological stressor owing to altered perception and reality testing.

Supported by the neurophysiological and motivational-psychological animal experiments, it might be proposed that the understanding and

altering, especially of the habits, during the LSD treatment are results of stress-produced conditions, especially the heightened motivational level catalyzing learning processes.

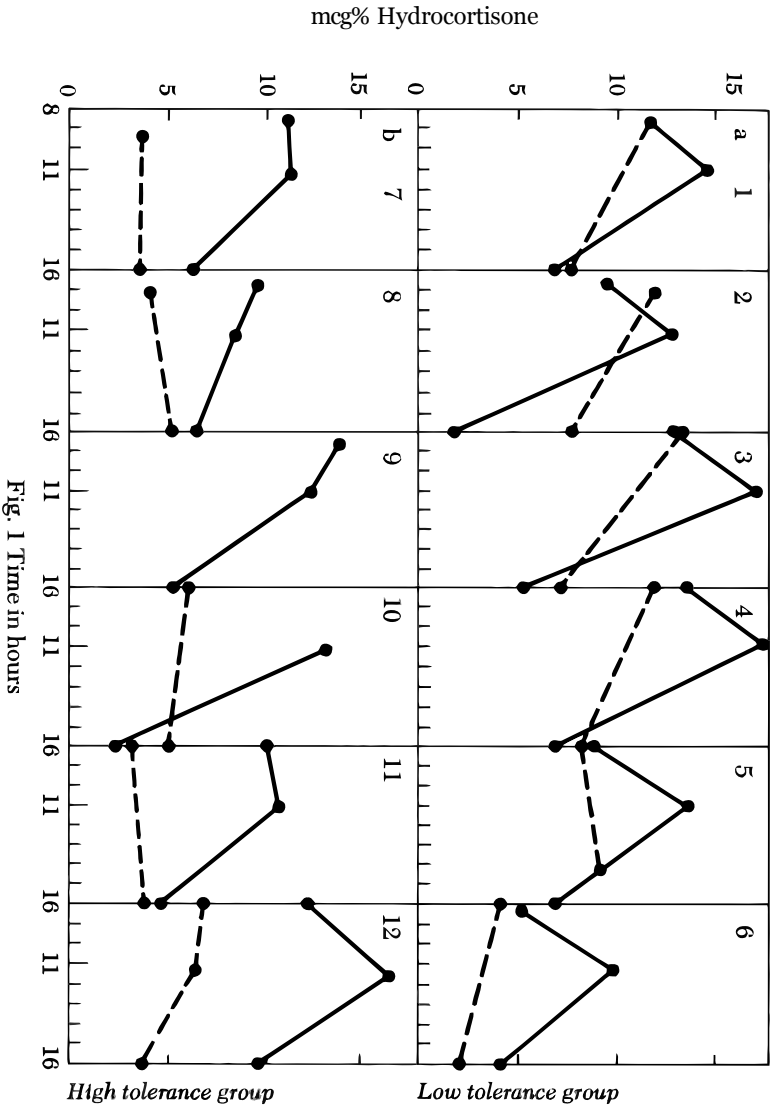


Fig. 1

DISCUSSION

Dr. Pahnke: Dr. Hertz, could you say something about how you helped your patients to re-learn or be conditioned? Do you give direct sug-

TABLE 1

Pt.nr.	Plasma-K Control	Plasma-K LSD	Plasma-Na Control	Plasma-Na LSD	Plasma-creatinine Control	Plasma-creatinine LSD	P.B.I. Control	P.B.I. LSD
1.		3, 6		140		1, 2	2, 7-3, 8	2, 2-2, 4
2.	4, 5	4, 5	144	139	0, 9	0, 9	7, 6	4, 2-4, 4
3.	4, 7	3, 8	145	138	0,9	1, 1		7, 8-7, 0
4.	4, 1	3, 6	144	140	1, 2	1, 3	1, 8	6, 2-4, 0
5.		5, 0		140		1, 4	5, 4-6, 6	6, 3-7, 4
6.	4, 3	4, 0	141	136	1, 0	1, 1	2, 8-2, 1	6, 6-5, 4
7.	4, 1	3, 4	146	142	1, 2	1, 2	5, 8	
8.	5, 5	4, 5	139	142	1, 1	1, 2	3, 0	6, 1-6, 1
9.		4, 6		145		1, 2	4, 7-4, 8	4, 2-3, 8
10.	4, 3	3, 4	142	141	1, 18	1, 3		7, 3-6, 9
11.	5, 2	4, 3	142	138	0, 9	1, 2	8, 7-8, 9	5, 8-5, 1

gestions? Or do you try to have them gain insight? And in doing this, what is your frame of reference?

Dr. Hertz: I have treated my patients with psychotherapy. I am all set to consult with them. We have no systematic psychotherapy.

Dr. Fremont-Smith: You mean it is all unsystematic?

Dr. Hertz: Well, we talk with the patients when they ask for it, and when we make rounds most of the time the patients want to talk to us. But at any rate, I have no systematic psychotherapy. Other colleagues in the department represent other points of view. We hope always to have as many directions of psychiatry as possible.

Dr. Fremont-Smith: Are these others also treating the patients with LSD?

Dr. Hertz: Not my patients.

Dr. Fremont-Smith: Their patients?

Dr. Hertz: They have patients of their own.

Dr. Fremont-Smith: And do they sometimes get well?

Dr. Hertz: Well, we are making a report on several patients who were treated for years. They were treated for about five years. We started with very primitive conditions, and Dr. Johnson, the head of our department, had a private place in the hospital that he used for this purpose. I must say that we had only positive responses to treatment in 45 percent of these patients during the year we used our method.

Dr. Fremont-Smith: Are these just your patients, or all the patients treated?

Dr. Hertz: All the patients; but I think with mine it was just about the same.

Dr. Pahnke: Just one further question: what is the frequency of your treatments, and what dosage level do you use? Is there any psychotherapy given after the treatments? Between treatments?

Dr. Hertz: Well, we give psychotherapy between treatments when the patients want it. Our dosage ranges from 50 to 300 mcg, and I cannot say that it depends on the weight. We have gone up to 500 or 600, but that is very seldom. Most of the patients have between 100 and 200 mcg. The treatments are once a week and in some cases twice in a week. But most of the patients have one treatment a week.

Dr. Fremont-Smith: And how many treatments per patient, roughly?

Dr. Hertz: Between twelve and eighteen.

Dr. Freedman: I would like to see investigators who do good work be able to get the drug, but I think that we ought to be clear about where the responsibility lies, as to why we are not able to have the drug in a more satisfactory way. For one thing, there isn't a place on this schedule to discuss why in this country LSD is so difficult to obtain. There are reasons for it; probably good ones and bad ones; and I think that when these are reviewed and some of our foreign guests comment on the national scene here, we will understand more why we are having difficulties. I don't understand exactly why this country seems to be more a victim of cults and narcotic drugs in general; perhaps that is part of our problem.

Dr. Fremont-Smith: And of restrictions.

Dr. Freedman: Now as to restrictions. I think we generally get angry at drug houses, and pharmacologists generally, because they push drugs for their own profit. I think it should be perfectly clear that Sandoz has been just the opposite. Mainly, they have retained their product and released its usage and have done so in an admirable way. We must make our data objective enough to convince our colleagues, to convince the FDA; and we must find ways to advise commissioners of mental health and to apprise the FDA. I think if we address ourselves to that problem, then perhaps the rules and regulations would change in some of the ways some of you would like them to change. This means that we are going to do more controlled studies.

Dr. Fremont-Smith: Thank you for your comment on my comment. I hope Dr. Abramson will speak on this and any other aspects at this point because we are coming close to the crucial end of this first day.

Dr. Abramson: Well, I just have one minor remark to make, that everybody seems to be able to get LSD and other similar drugs except physicians.

Dr. Fremont-Smith: Is this true? Who can get it? For instance, can somebody get it to experiment on cats?

Dr. Abramson: One can get it for use on animals, with some difficulties. But certainly, in answer to Dr. Levine's question, patients that I have seen who have obtained so-called bootlegged LSD were in general people in the upper income, upper intellectual brackets who were given it some years ago by psychiatrists who were and are qualified to give it. As I said, the patients' self-image often improved. These are for the most part perfectly decent, hard-working, respectable people with problems not readily solved by presently available psychiatric methods. Now, I don't have a large number in my series, since I'm in private practice. All of them had previously taken it under medical supervision with improvement of their own self-image.

I'd like to bring up Dr. MacLean's point. I wonder if Dr. MacLean would take the responsibility of appointing a small group, say one person from each country, and say two from the United States or on a population level anyway, to meet with him tomorrow evening after dinner to discuss ways and means of dealing with a committee to discuss standards of therapy, etc., which he suggested.

Dr. MacLean: I would be delighted. I would certainly be delighted to do this, provided those people who share my interest in seeing this done would perhaps approach me some time during this evening or tomorrow to make the talk a little easier.

Dr. Osmond: I just want to speak on Dr. Abramson's point. One does feel rather a fool when you are almost unable to get LSD yourself except under very restrictive circumstances. If someone says, "I can get as much as I like," you feel like an absolute idiot. The situation is such, I gather from competent people, that it is likely to increase and not get less, because I am told that the synthesis is getting steadily easier, and the number of skilled people about is getting steadily more, so that we are in a position that has very strange, almost ludicrous aspects.

Dr. Rinkel: What Dr. Osmond said, of course, is so definitely true. From my experience in Boston, the black market there has unlimited amounts of LSD.

I would also like to make another point. A number of psychiatrists, unqualified in research, unqualified in the use of LSD, have approached me to get LSD for use in their practice. They had the idea that one administration of LSD would cure their patients. The commissioner has been very strict about it and has said it has not done so. LSD in research will be done only under strict supervision in a hospital by qualified psychiatrists.

Dr. Fremont-Smith: The qualification of a psychiatrist is not just a qualified psychiatrist. It is a qualified psychiatrist who happened to be in very special situations, like Veterans Administration psychiatrists or people who have NIH grants or something like that. Right?

Dr. Rinkel: Not only that, but they also have to be—to have knowledge of the use of LSD, or at least have to be qualified in research.

Dr. Fremont-Smith: But if they are qualified in research and have the knowledge and don't have these other items, they do not get the LSD.

Dr. Rinkel: Not at the present time.

Dr. Fremont-Smith: Therefore, it is not satisfactory.

Dr. Rinkel: Unless they are approved by the NIH or the Veterans Administration or the FDA.

Dr. Abramson: It's not approval. It is very much more complicated than that. They have to have a contract with NIH.

Dr. Rinkel: Well, no, the grant isn't necessary. Furthermore, I have to say that they have their standards, too. While, on the black market, at least in Boston, you buy a lot of sugar cubes of LSD for five to eight dollars. Sandoz gives it free of charge for research purposes to those who have been approved for research.

Dr. Fremont-Smith: We approve of that very much. That is not the issue, though. It has little or nothing to do with it. I think that we have come so close at this point that I will ask Dr. Hertz if he would like to comment on the American usage of LSD?

Dr. Hertz: I must say that I am happy that we don't have such problems in Denmark as you have here in America.

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Social and Para-Medical Aspects of Hallucinogenic Drugs

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SECTION II. PSYCHOPHARMACOLOGY

Comparison of LSD with Methysergide and Psilocybin on Test Subjects

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The Mechanism of the LSD Treatment as Viewed from the Aspect of Learning Processes

M. HERTZ, M.D.

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